



KLONDIKE

A MANUAL FOR GOLDSEEKERS

BY

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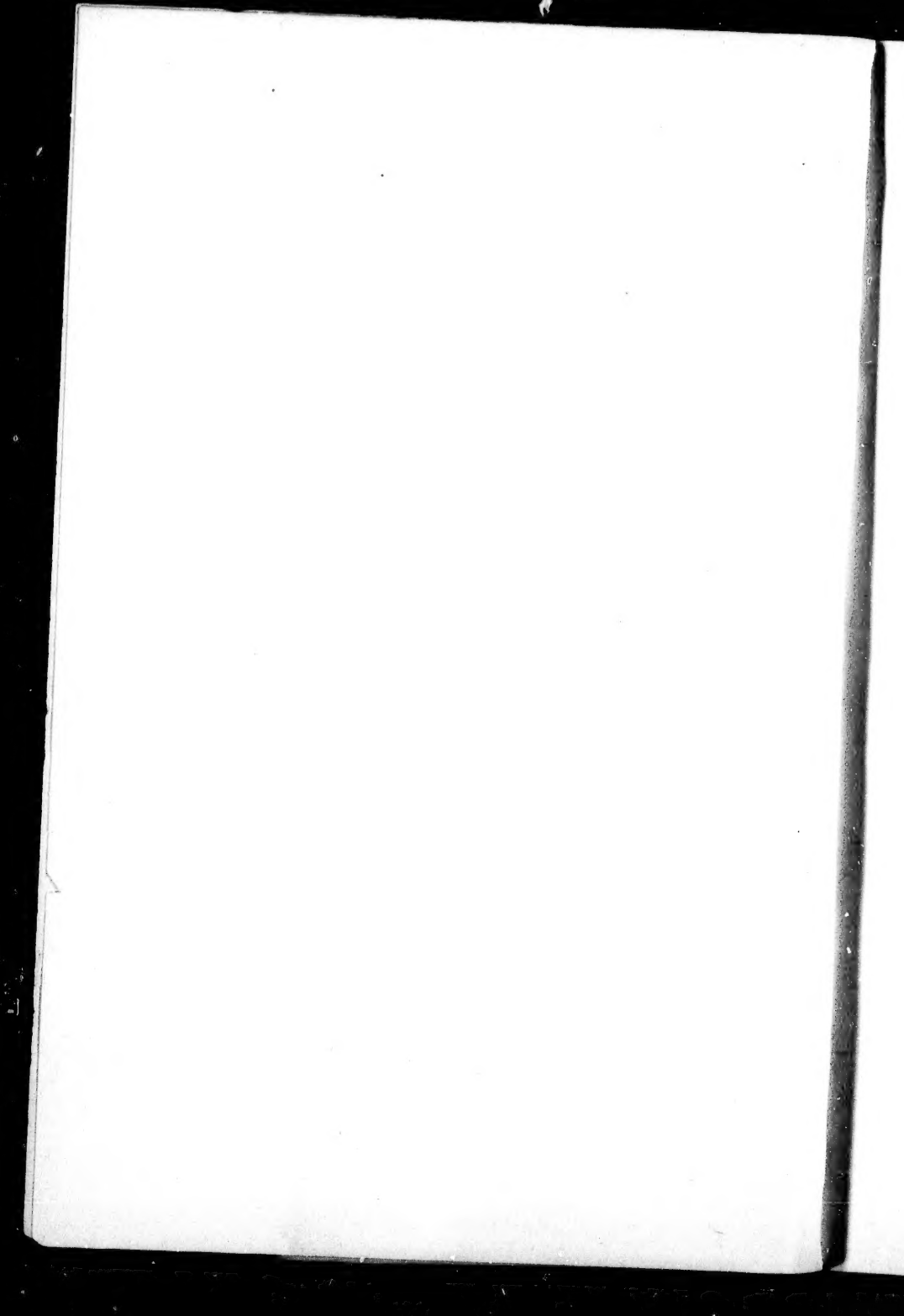
Klondike; A Manual for Goldseekers

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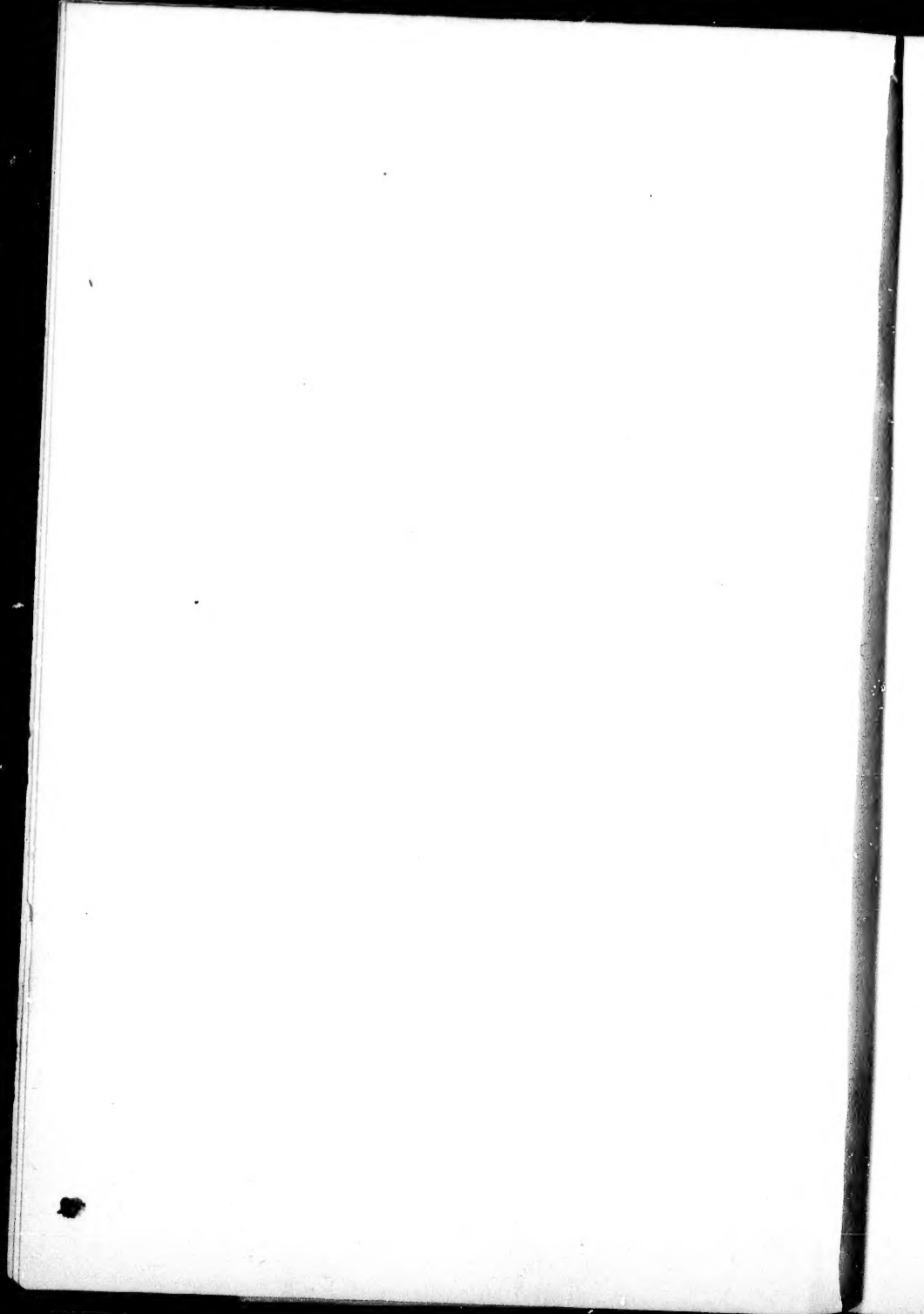
A WORD TO THE READER.

JUST now all eyes are turned toward the golden valley of the Yukon. No possible doubt exists that one of the richest, if not absolutely the richest, placer deposits ever discovered has been found within the past year in far-away Alaska.

At the present moment, therefore, such a book as this is wanted, especially as a flood of cheap, unreliable "Yukon" literature has been put upon the market. My experiences in the Northwest Territories and Canada have enabled me to select only what is valuable from amid the vast quantities of matter already published. My knowledge of mining and of the Northwest has been fully as much exercised in eliminating false statements as in accumulating paragraphs of worth.

I claim little as original in this book, but I expect it nevertheless to be of very great value to any prospective gold seeker who shall aim at acquiring some of the virgin gold of the North.

CHAS. A. BRAMBLE,
D. L. S.



INTRODUCTION.

A CLEVER California writer has said no one should venture to set out for the Alaska diggings without a good pardner. The word must not be confounded with partner. Partner has a smart, business-like sound. It is precisely defined by law, and though it may by courtesy involve something of special favor, its equities at last rest upon the decisions of courts without regard to sentiment. But a pardner glories in sentiment. He expects to give his mate all that the law requires and call that only a beginning. Men may be chums in easy, prosperous times, but it is not until they pass together through a succession of dangers and hardships that they become pardners. Congeniality and implicit confidence are at the base of a pardnership; and for better or for worse the two men stand as one under all vicissitudes, doubling each other's joys and dividing sorrows and failures. If one falls by the way the other gives him more than the devotion of a brother.

Gold mining eventually is a business conducted by large capital, but placer diggings afford an opening to any one who can stake and work a

claim. The two pardners begin operations on the ground-floor, share their discoveries, tent together, and cook for each other. Their qualities and traits are complementary. Pardners are closer than mess-mates in the army or navy. The soldier or sailor is under the care of a bountiful provider. His food, clothes and shelter are furnished by the government, and his comings and goings are regulated by orders. Pardners, on the other hand, must skirmish together from the start for subsistence and plans of operation. They fight the battle of life for two under hazardous conditions, far from families and friends, satisfied for the time being with bare necessities. Under such a test pardners are forged as steel is forged. It is not likely that the mining camps in Alaska will permit any one to starve, but they have a regulation for shipping those lacking means or resources out of the country. In a community of pardners a high sense of general humanity will prevail, but there must be prudence as to feeding drones during the long season when the lines of supply are interrupted. Alaska will furnish a great growth of friendship, with the pardner as its top flower. No man can utterly fall there who has a good pardner, and is one.

The following condensed Alaskan "nuggets" have been culled from various sources:

The first discovery of gold on the Klondike was made in the middle of August, 1896, by George Cormack.

The only way heretofore into and out of the Klondike in winter has been by way of Juneau.

The best way to live is to imitate the Indians in dress and habit. It is useless to wear leather or gum boots. Good moccasins are absolutely necessary.

The colder it is the better the traveling. When it is very cold there is no wind; and the wind is hard to bear.

Indian guides are necessary to go ahead of the dogs and prepare the camp for night. In the summer the sun rises early and sets late and there are only a few hours when it is not shining directly on Alaska. In the winter the sun shines for a short time only each day.

It is 2,500 miles from San Francisco to St. Michael's. It is 1,895 miles from St. Michael's to Dawson City.

In summer the weather is warm and tent life is comfortable. The winter lasts nine months. There are two routes by which to reach Dawson City. One touching St. Michael's Island and the other via Juneau. By steamer it costs \$150 to go from San Francisco to Dawson City.

Dogs are worth their weight in gold. A good long-haired dog sells for \$150 or \$200.

The Yukon River is closed by ice from November to the latter part of May. On the Klondike the thermometer goes as low as 60 degrees below zero.

There is a great variety of berries to be found all through the country in summer. Game

is very scarce near the mines. Vegetables of the hardier sort can be raised. Stock can be kept by using care in providing abundantly with feed by ensilage or curing natural-grass hay and by housing them in the winter. In summer abundance of fine grass can be found near the rivers.

In appearance the natives are like the North American Indians, only more lithe and active, with very small feet and hands. They live in temporary camps both winter and summer, either in the mountains or on the river banks, according to the habits of the game they are hunting.

Gold was first discovered in the vicinity of Sitka by Frank Mahoney, Edward Doyle and William Dunlay, in 1879.

As regards the strictly American possessions the following are worth remembering:

Purchased in 1867 from Russia, for \$7,200,000; purchase negotiated by William H. Seward. Area in square miles, 531,409.

Population, census of 1890, 30,329, of whom but 4,416 were whites, 8,400 Esquimaux, and 13,735 Indians. Estimated present population 40,000.

Principal cities, Sitka, the capital, Juneau, Wrangel, Circle City. Principal rivers, the Yukon, more than 2,000 miles long; the Kuskokwim, the Colville and the Copper. Principal mountains, Mount Logan, altitude, 19,500 feet; Mount St. Elias, 18,100; Mount Wrangel, 17,500 feet.

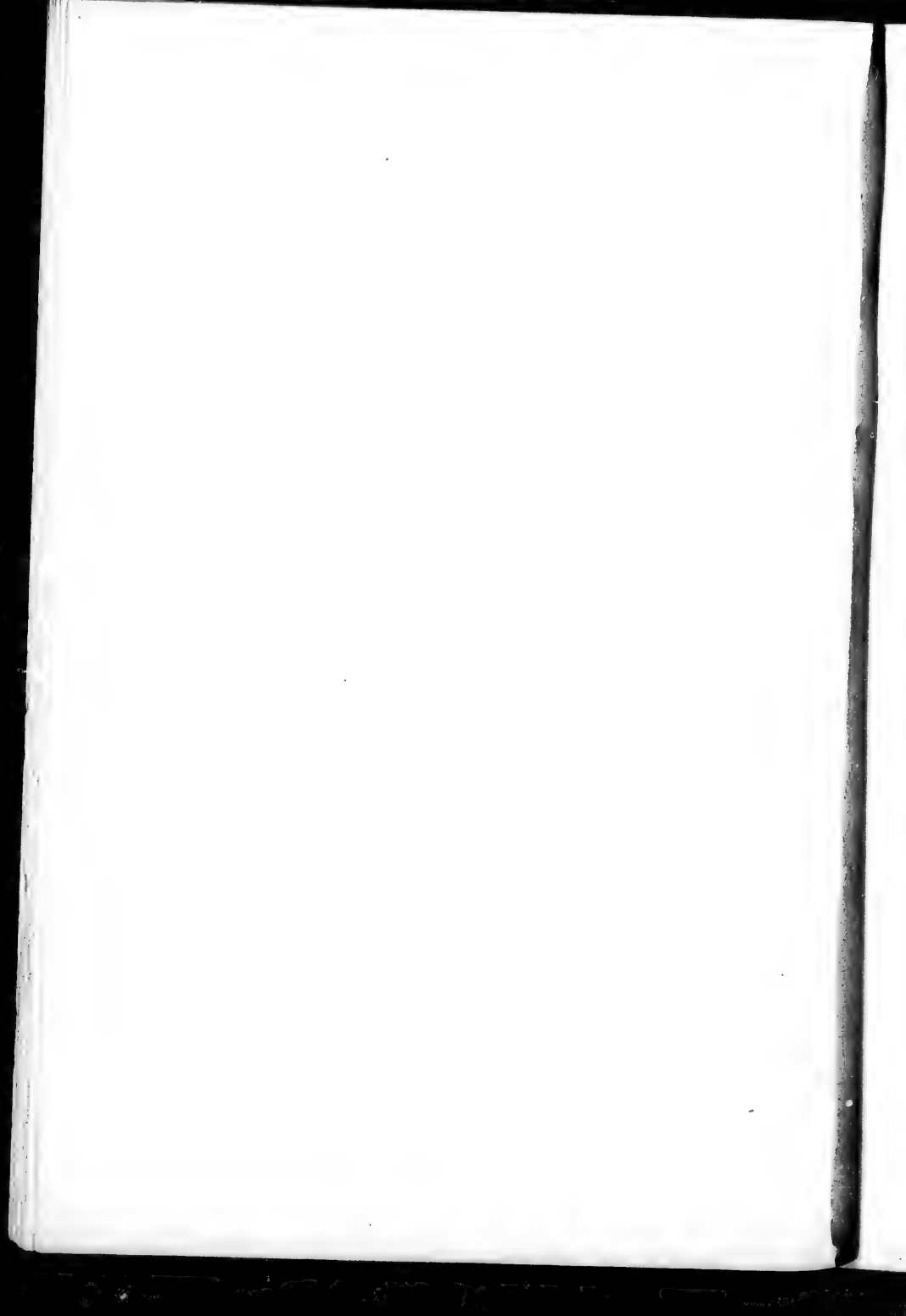
Principal occupations of the people, hunting and fishing.

Gold first discovered in 1879. Estimated product of gold to date, \$30,000,000. Product of gold in 1896, \$4,670,000.

Klondike in English is Fish River. Klondike gold fields are in British territory, and the product is disposed of in the United States.

The scene of the present excitement is along the upper Yukon and its tributaries.

It takes at least six weeks to reach the Klondike from Seattle by water, and thirty or forty days by the Chilkoot Pass route.



KLONDIKE.

THE COUNTRY.

ALASKA'S chief river, the Yukon, is one of the grandest streams on the continent, and in size is surpassed only by the Mississippi, if, indeed, it is not the larger—at least, in point of volume. At the old Hudson Bay post, Fort Yukon, now abandoned, the river attains its northermost latitude, being just within the Arctic circle.

At a point just above Fort Yukon the river has been found to have a width of seven miles. Just above Fort Yukon the channel of the river is subject to frequent changes by reason of shifting sand, but this offers the only considerable obstacle to navigation from the mouth of the Yukon to Fort Selkirk, a distance of 1,600 miles.

Such is the volume of water discharged by this mighty stream that it is said that fresh water is found in the ocean ten miles out from the chief mouth of the river. The entire length of the river is estimated at not less than 2,000 miles, and the probability is that it is much greater.

Those who have traveled some of the navigable portion of the river describe the Yukon Valley as most beautiful in scenery, fully equaling, even exceeding, anything offered by natural scenery in the United States. The boundary of the upper part of Alaska Territory between the United States and Canada, from Mount St. Elias to the Arctic Ocean, is very clearly defined in the treaty as the 141st meridian. The only difficulty about this part of the line is in locating that meridian. There is some slight difference between the American and Canadian surveys, but that difference can be easily settled.

It has been stated by Canadian newspapers to involve a strip not more than sixty feet wide at the point where the line crosses the Yukon. Some question has arisen from the fact that in the treaty the meridian was described as crossing Mount St. Elias, whereas it has since been found to be a little east of that peak.

The treaty between Great Britain and Russia made in 1825 provided that the line should start from the southernmost point of Prince of Wales Island and ascend to the north along Portland Channel, as far as the 56th degree of north latitude; thence should follow the summit of the mountains parallel to the coast as far as the point of intersection with the 141st degree of west longitude. Wherever the summit of the moun-

tains parallel to the coast proves to be more than ten marine leagues from the ocean, the boundary line is to parallel the windings of the coast not more than ten marine leagues therefrom.

But a very limited section of this vast area, which was purchased by the United States from Russia in 1867 for \$7,200,000, is known to civilized man. The far greater portion is as yet unexplored. The territory, according to the latest figures, comprises 580,107 square miles. The mere figures convey but a faint conception of its extent. The Territory of Alaska has an area very nearly equal to the combined areas of Connecticut, Delaware, District of Columbia, Florida, Georgia, Maine, Maryland, Massachusetts, Mississippi, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Vermont, Virginia, and West Virginia; it nearly approximates one-fifth of the area of all the rest of the United States. Alaska's coast line on the mainland is about 7,860 miles, or greater than the eastern coast line of the United States. The coast line of the mainland and islands is nearly four times as great as all the other coast lines of the United States combined.

Dr. Dawson, who made geological explorations in the upper Yukon region, testified as follows: "With regard to the gold on the Liard River,

which is a tributary of the Mackenzie, I may state further that remunerative bars have been worked east of the country down toward the Mackenzie. The whole appearance of this country leads to the belief that important mineral deposits will be found in it besides those placer mines. There are large quantities of quartz ledges along the rivers in many places on the Liard River; half the river gravel is composed of quartz, and the whole country is full of quartz veins, some of which are likely to yield valuable minerals."

Q. Is it a gold-bearing quartz?

A. Yes; because we find gold in the bars, though not, so far as I have discovered, in the loose quartz. In fact, the whole country at the headwaters of the Liard, and running across to the Yukon, forms part of the metalliferous belt which runs from Mexico to Alaska and includes a great area of that country which is as likely to be rich in minerals as any portion of that metalliferous belt. We should remember that in British Columbia and on the headwaters of the Yukon we have from 1,200 to 1,300 miles of that metalliferous belt of the west coast. This is almost precisely the same length of that belt contained in the United States, and I think there is every reason to believe that eventually it will be found susceptible of an equal development

from a mining point of view. From circumstances to which I need not now refer, it has so far been more developed in the United States than on this side of the line.

Q. What is the average width of that belt of 1,200 or 1,300 miles?

A. About 400 miles on the average. Fort Selkirk, or the ruins of Fort Selkirk, at the mouth of the Lewis River, which is one of the main branches of the Yukon, is about 1,000 miles due north of Victoria, without taking into account ten degrees of longitude which it is west, but it gives an idea of the depth of the country which is worth remarking. You find a country here 1,000 miles north of Victoria in which there is no doubt you can still grow barley and hardy cereals, a distance as nearly as possible identical with the whole width of the United States on the Pacific coast from the 49th parallel to Mexico, yet at Fort Selkirk we are still 750 or 800 miles from the Arctic Ocean—nearly twice as far from the Arctic Ocean as we are here in Ottawa from the Atlantic.

Q. That would make a square area of 520,000 miles. Is that what the committee are to understand?

A. That will express the area of the metalliferous belt in a general way, and may be taken as a minimum figure. This Yukon country was first

prospected in 1880, by miners who came across by this Chilkoot Pass. Since then a yearly increasing number of miners has been going in. This last summer there were about 250 men, nearly 100 of whom are wintering at Forty-Mile Creek, near the international boundary. The gold which was taken out of that country last summer, not counting the Cassiar country to the south, but merely the Yukon district, was estimated by the miners at \$70,000, but that is a very rough estimate indeed, because there is no way of checking it except by allowing so much per man on the average. There is an almost unprecedented length of river bars from which gold is obtained in that country. I have not tried to estimate it, but here and there on nearly all those rivers gold is found in paying quantities. The gold-bearing river bars must be reckoned in the aggregate by thousands of miles in length.

Q. All those rivers, meaning the Yukon and its branches, and the Liard and its branches?

A. Yes.

Though the Coppermine River lies east of the Mackenzie and far from the Yukon, it may be interesting to give here the testimony of Dr. Dawson in regard to copper in that river. He said, speaking of the Coppermine River particularly, that "there is every reason to believe there is a repetition along that river and in its vicinity

of those rocks which contain copper on Lake Superior, and which have proved so rich there." But that region seems to be beyond the reach of the prospector at present.

"I see a good many newspaper criticisms in which the prophecy is ventured that not more than one-tenth of the parties going to Alaska 'will come back prosperous,'" said one returned Yukoner. "This is a mistake. There is no question of their finding gold in any part of the Yukon Valley, the only question being whether they can find it in paying quantities. It is there, everywhere. We traveled over 1,000 miles of the interior and found gold wherever we dug for it.

"I never in all my life saw a country where there is so much and so many variations of light as in Alaska. I don't think it ever rains in the interior. The sun shone with dazzling brilliancy during our entire trip, and no sooner had it set, than the aurora borealis overspread the skies with its fantastic and shifting colors. At night it was truly a country of fairyland, the shadows and tones of these northern lights being simply wonderful. I have seen them so bright that I could read by their light.

"I believe that I stated to you that the interior is destitute of game. This is true, with but one exception. The Yukon River is full of little

black ducks during the summer. They live on mussels and are continually diving for them. They are far from being wild, and I have seen them swim up close enough to touch our canoe lots of times. They are not good eating, however, having a rank, fishy taste.

"There seems to be but three varieties of vegetation in the interior. Fir and yellow cedar forests cover the land, and the rank, waist-high moss. It resembles more nearly some variety of cactus, and is so full of saws, prongs, etc., as to be impenetrable. The cedars and firs are none of them very large, but appear to be very old, some, perhaps, having grown there for ages."

A correspondent of the *Washington Evening Star*, says: "It is not necessary for everybody to feed on dog meat on the Upper Yukon River and in the vicinity of the Klondike gold field in winter, as a member of the party which was up there said several of the members did. He refused the dish, but at the same time he acknowledged that more than once after food had been thrown to the dogs, literally speaking, he had snatched it away from them before they could eat it. Fish which small worms had appropriated to themselves he did not hesitate to eat, he said, and was glad to get it.

"That is one of the great troubles which will be encountered by persons visiting the gold

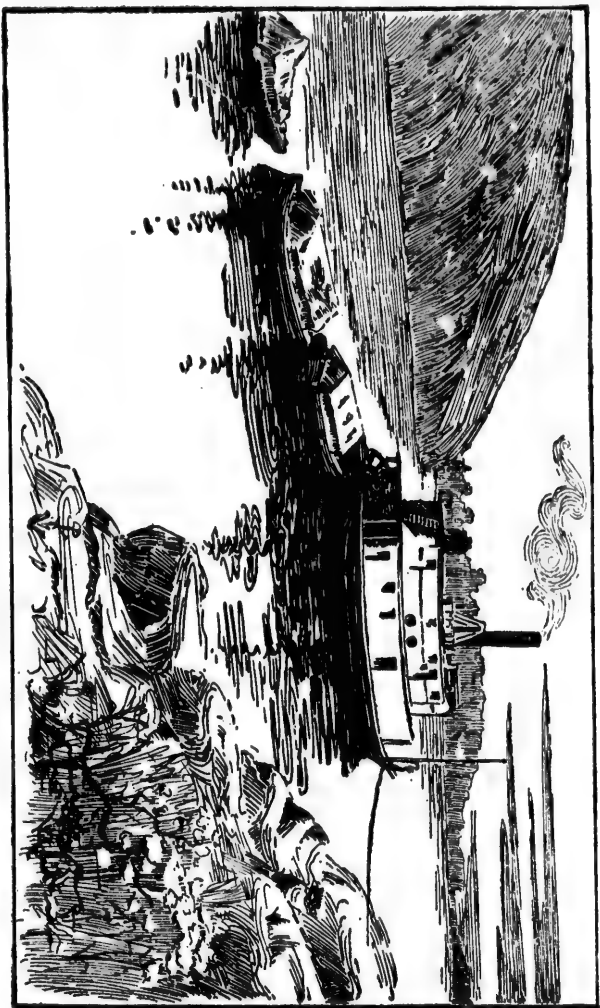
fields. The further up the Yukon one travels the scarcer becomes the food supply, until in the Klondike region and therabouts it ceases almost entirely. There is practically no large game, with the exception of one or two moose and reindeer, which have become separated from the rest of the herd and wandered out there. So that prospectors who intend visiting the field should not rely in the least on the resources of the country to feed them. There may be a few rabbits, ducks and geese in the spring, which disappear very quickly. These are not sufficient to supply even the wants of the few natives who wander nomadically about the region."

Lower down the Yukon, at certain seasons of the year, there is abundance of game, probably from 400 to 500 miles from the Klondike River. The moose is about the largest of the animals, while the reindeer is fairly plentiful. As the population has increased, the game has correspondingly decreased, and in the winter the Indians there have a hard time securing food, as they are very improvident. During the season when it is abundant they never think of laying by a supply. There are beavers on the streams, and various kinds of deer, bear, and caribou. In the winter months these go south or disappear almost entirely. The polar bear is found several degrees further north, never appearing in that vicinity.

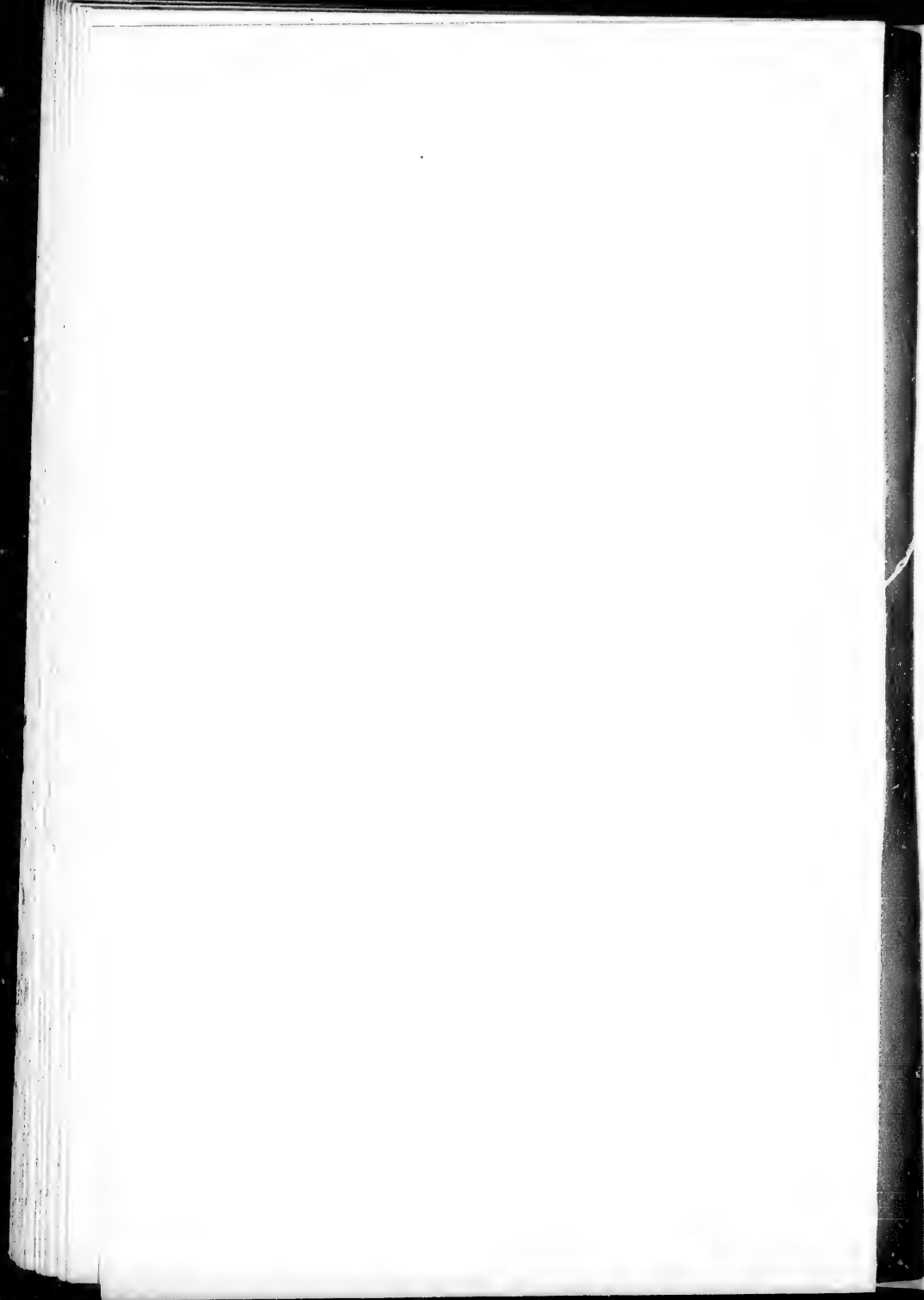
In the mountain streams which feed the Yukon River, up toward its head, near the Kathul Mountain, there are mountain trout of good size and flavor. Many of these streams dry up in the winter, as they are fed by glaciers, which, of course, in cold weather are frozen entirely. The salmon is found in the Yukon in immense numbers in summer. The whitefish which is found near the Klondike River, is said to be excellent eating. It ranges in size about the same as our black bass, and is one of the chief mainstays of the Indians. In winter, if it is not too cold, holes are cut in the ice, and the fish pulled out by means of bone hooks. They are more plentiful than any other kind, and the ice-cold water appears to be their natural habitat.

Early in the spring water fowl, such as ducks, geese and swan, put in an appearance, but they do not tarry long, and wend their way after a stay of only a few days. They are very plentiful when they do appear, and the natives kill them by hundreds. The trouble is, however, that things of the kind do not last as they do in warmer climates.

Reindeer formerly were seen in very large numbers on the Yukon, some two or three hundred miles from where the Klondike flows into it, and a gentleman who spent two or three winters there several years ago has stated that he had



Towing Supplies Up the Yukon River.—Page 20.



seen a herd of at least 5,000 cross the river on the ice in one day.

Klondyke would-be prospectors should bear in mind the fact that in that region, where game is scarce, the appetite is something wonderful. All kinds of food are eaten with relish, particularly anything that has fat or grease about it. The sharp air increases hunger nearly a hundred fold, and it is necessary to have plenty of provisions in order to withstand temperatures sometimes as low as 68 degrees below zero. Persons who have passed the winter there state that it is much better not to touch alcoholic liquors, as the after effects from indulgence in them are much worse than any benefit which may be derived from temporary stimulation.

Tea is considered one of the best things which can be taken, and it is drunk in large quantities, strong, and as hot as possible. This seems to keep the heat in and the cold out better than anything else. All kinds of canned goods are excellent, and dried fruits or lime juice should be included in every bill of fare, as scurvy is prevented by making use of them. It is necessary to use large quantities of salt meats, which often produce the disease.

It is believed by travelers up the Yukon River that vegetables that grow rapidly could be raised profitably in the summer months. Potatoes, it

is thought, could be brought to fruition without trouble, and turnips also. The latter have been raised successfully by missionaries 400 or 500 miles or so from the source of the river. The sun there has naturally very much power in the three or four months of summer, and in hothouses lettuce and other vegetables could be raised easily.

When Humboldt expressed the opinion that gold came from the north he did not adduce much evidence in support of his theory. We have had a wonderful demonstration of the truth of his suppositions in the Yukon Valley.

The more we reflect upon the extraordinary gold deposits there, the more bewildered we become. Every claim which has been operated on the gold-bearing creeks has become a producer. We have yet to hear of a single locator who failed to find gold if he went down to bed rock. There are a great many claims yet to hear from upon which no work has been done yet, and as there are winter diggings, we shall not hear from these for a long time yet. Experience proves that mines in a mineral country are discovered in proportion to the number of prospectors out. It is therefore quite reasonable for us to assume that we shall hear some interesting news from the interior, when the hundreds of miners who have recently gone down the river have had time

to spread themselves over the country. The district in which Bonanza and Eldorado Creeks are situated forms but a small portion of an immense mineral belt. The few hundred men who were in the country at the time the discovery was made took up claims one after the other on the creeks which were known to carry gold, and in many instances sold them for large sums without putting in a pick or panning out a shovel full of gravel. Of these, some remain to live a life of hilarity at Dawson, and others, more prudent, are coming out with their fortunes intact. Such was the conditions of affairs before the population of the district was augmented by the spring arrivals. Now there will be vigorous and systematic prospecting done, and the country will be closely examined for many miles around the present diggings. Hitherto the best results have been obtained in the fall, and we may look with some certainty for a result from this summer's prospecting.

Even in the most favorable of times the life of a miner on the Yukon could not be an easy one. A practical mining-engineer publishes, in one of the Ottawa papers, a catechism which, he says, every would-be gold-hunter should ask himself before he starts:

"Have I a capital of at least \$500? Am I subject to any organic or chronic disease,

especially rheumatism? Am I physically sound in every way and able to walk thirty miles a day with a fifty-pound pack on my back? Am I willing to put up with the rough fare, sleep anywhere and anyhow; do my own cooking and washing; mend my own clothes? Can I leave home perfectly free, leaving no one dependent on me in any manner for support? Can I do entirely without spirituous liquors? Can I work like a galley-slave for months if need be, on poor fare, and sometimes not enough of that, and still keep up a cheerful and brave spirit? Am I pretty handy with tools and not subject to lazy fits? Can I swim, and handle boats and canoes; put up with extremes of heat and cold, and bear incessant torture from countless swarms of mosquitoes, gnats and sand-flies?"

For men who are healthy and strong, who love adventure and beautiful scenery, who have money to keep themselves for two years—or more if they don't make a strike—for such men to go into this country is all right, and a good thing.

Owing to the gold discoveries at Klondike much interest is lent to any fresh information regarding that region. The official report made to the census office in 1890 contains a mass of information bearing indirectly on the general section of the country in which the Klondike is situated, and the appended extracts will be found worthy of attention.

The mighty stream known as the Yukon does not appear by that name on the map until the confluence of the Pelly and Lewis Rivers is reached, about longitude 137 degrees 3 minutes west, in British Northwest Territory. Both of the latter are large rivers. The Lewis River is the best known, having been used for the past six years as the highway from southeastern Alaska to the gold diggings on the Yukon, near the eastern boundary of Alaska. Its length from Lake Lindermann, one of its chief sources, to the junction with the Pelly is about 375 miles, and it lies entirely in British territory, with the exception of a few miles of the lakes at its head.

The Pelly River takes its rise about Dease Lake, near the headwaters of the Stikine River, with a length of some 500 miles before joining the Lewis to form the Yukon River. The union of these two streams forms a river varying from three-quarters to a mile in width. For many miles the northern bank is a solid wall of lava, compelling the swift current to follow a westerly course in search of an outlet to the north. The southern bank is comparatively low, formed of sandy, alluvial soil. A few miles above the White River the stream takes a northerly course through a rugged, mountainous country, receiving the addition of the waters of the White River on the south, so called from the milky color of

its waters, and a few miles further on the waters of the Stuart on the north. The current is exceedingly swift here, especially at a high stage of water, as I saw it, being at least six or seven miles an hour. From Stuart River to Fort Reliance both banks are closed in by high mountains, formed chiefly of basaltic rock and slaty shale. Many of the bluffs are cut and worn in the most picturesque shapes by glacial action. At Fort Reliance, an abandoned trading post, the general course of the stream changes to northwest, continuing thus for a distance of about 500 miles, or as far as the confluence with the Porcupine River, which flows from the north.

Some forty miles from Fort Reliance the mouth of Forty-Mile Creek is passed, where is located the miners' trading post. On that creek, or river, we find the chief gold diggings known at the present time. Some thirty-eight miles from there the river crosses the eastern boundary of Alaska. Here was located for the last two seasons the camp of one party of the Alaska boundary survey, it having been previously the camp of the Canadian government party. For 100 miles after crossing the boundary the river runs in one broad stream, confined on either side by high banks and a mountainous country, known as the "upper ramparts." It then widens out, and for a distance of 150 miles is a network of

channels and small islands. At old Fort Yukon, an abandoned Hudson Bay post, it attains its highest northern latitude, being just within the Arctic circle. From main bank to bank the distance has been found to be seven miles at a point just above the site of Fort Yukon. This place is probably the only serious obstacle to navigation that is met with from its mouth to Fort Selkirk, a distance of over 1,600 miles, the channel here shifting from year to year, and being at certain stages of water difficult to find. From Fort Yukon to the mouth the river has been frequently traveled and described, rendering further description unnecessary. Without actually taking measurements it is exceedingly difficult while traveling on the river to determine the immense volume and magnitude of the stream.

The population of the Yukon country is very sparse. At certain times during the year a traveler might pass down the Yukon from Forty-Mile Creek to Nuklukayet and hardly see a score of natives in a distance of 800 miles. The different villages or communities seem to be under the guidance of chiefs and subchiefs, though there does not appear to be much authority exerted by them, and I could never ascertain that this chieftainship was hereditary.

Their mode of transportation in summer time is by rafts, boats, and birch-bark canoes, and is

entirely confined to the streams and water courses; in the winter time sleds are used, drawn by dogs, men or women. Their language is known to the missionaries as a dialect of Tukudh (Takuth), but they converse with the traders in a jargon called "Slavey," a mixture of Canadian French, and hybrid words of English, something in the nature of the "Chinook" of Southeastern Alaska.

In winter a species of mudfish called blackfish, found in the lakes, is a great food source, being caught in quantities in traps during the fall and winter, allowed to freeze and then eaten raw. Large quantities of water fowl eggs are obtained in season, also the birds themselves, it being the summer home of many varieties of ducks, geese, swans, and other aquatic fowl. In winter the only means of traveling is in sleds drawn by dogs.

Mining cannot be called a success on the Yukon up to the present time. Since the first excitement in 1886, there have been few instances of individuals taking out of the country more than \$2,000 for two, and even three seasons of privation and hardship. There are but a few isolated cases of more than that amount being taken out. The majority of the miners are working on prospects with a heavy account at the store against them. The hardships of travel-

ing to prospect, the short working season, and the frozen ground are obstacles difficult to overcome. The prices of supplies at the store are high considering the small means at the disposal of the miners, but they are not much more than barely remunerative to the trader, owing to the expense and risk of transportation.

The merchandise is carried on the river by means of stern-wheel steamers, the two principal ones belonging to the Alaska Commercial Company; one of 200 tons and the other of 30 tons capacity, carrying freight and passengers. On the larger boat there is a white man for captain and another for engineer; but both captain and engineer are unlicensed and without papers; the rest of the crew are Indians. There are three other small steamers, two belonging to the Russian and Catholic missionaries respectively, and one to the trader at Fort Selkirk. All supplies are received at St. Michael, on Norton Sound, 80 miles north of the mouth of the Yukon, the furs and gold obtained being turned over to the Alaska Commercial Company's agent there, and shipped to San Francisco. Once a year, in June, missionaries and traders assemble at St. Michael, and for a few days that place is doing a rushing business. It has become a regular fair for the natives, who gather in numbers from various points on the

coast and river, getting a few days' work from the company and having the satisfaction of seeing the new stock of merchandise.

The influx of miners in the country has produced marked changes among the natives, and not to their benefit morally. The illicit manufacture and use of liquor, both by the traders of the company and miners, is certainly demoralizing the natives to a great extent. It is openly carried on both on the upper and lower river. At Andreafsky, on the lower river, it is a common sight to see intoxicated natives, more especially in the winter, and the natives have now learned the process of making liquor for themselves, more particularly on the coast, and on the lower Yukon.

On the coast the temperature varies from 70 degrees Fahrenheit in summer to 40 degrees and 45 degrees below zero in winter. The late summer and fall is usually stormy and wet, the snowfall in winter being from three to five feet on a level. Navigation is closed to the outside for seven months in the year by heavy ice on the sea. The Yukon River is closed by ice from November to the end of May. In the interior the climate is drier and warmer in summer, but many degrees colder in winter, the thermometer going as low as 60 degrees below zero. The snowfall is excessive, but less wind prevails here in winter than on the coast.

In speaking of the physical features of the great Yukon Valley and of its native inhabitants I prefer to begin with the coast region and deltoid mouth of the river, following it up and giving my impressions just as they struck me during my gradual, frequently interrupted, advance from the low seaboard to the rocky gorges of the upper river.

The observant traveler, standing upon the deck of one of the small stern-wheel boats laboriously pushing its way against the powerful current of turgid, rolling waters, will be struck with the immense area of alluvial soil which has been carried bodily for centuries and ages from the far interior to the verge of Behring Sea. The land here is being made and unmade under our very eyes. The ice-laden freshets of each returning spring never leave unchanged the contour of the shores which but imperfectly confine the rushing waters. A solid cake of ice, caught in an eddy and set into swirling motion, grinds against the loosely constructed bank, and undermines it until a mass of sand or clay falls down upon it. The impetus given by the precipitated earth drives the ice cake out of the eddy and sends it adrift upon the current, to be carried on and on, until stranded again upon the low beaches of the delta, or some distant island of the sea, when its cargo of soil will be deposited

as a gift of the great Yukon. On the other hand, land-making is going on just as constantly. The accidental lodgment of one of the gnarled giants of the inland forests on its way seaward may cause the formation of a muddy bar or island within the space of a few years. Thickets spring up from twigs of willow deposited by the passing flood, or from seed carried by the wind, and strengthen the new ground, binding together its component parts with their roots until it can resist the ordinary pressure of rushing flood and grinding ice. Even a sudden rise of a few feet in the water, or an unusually heavy formation of ice on the upper river may undo in a few moments what nature has been years in creating. The little island will then dissolve like snow before the sun, and its component parts be torn away, and carried suspended in the raging flood until the neutralizing action of opposing tides causes them to settle and scatter broadcast over the shallow bottom of Behring Sea, contiguous to the great river's mouth.

Under more congenial skies this vast accumulation of the richest soil would doubtless attract a teeming population; and who knows whether this mighty water power may not now be building for the future, when some slight deviation in the axis of our whirling globe may unlock the icy fetters that now bind the land, compelling



International Boundary Across the Yukon River. (Looking North.)—Page 33.

man to rely upon the products of the sea alone for his subsistence, and teaching him to look but for scanty favors from Mother Earth. Should that time come in some far distant period, there will be here a field of agricultural wealth and greatness surpassing in range and possibilities that of the acient Nile. The very sea is aiding in building up and enriching this possible granary of future geologic ages, by sending its finny denizens by countless millions up into every vein and artery of the vast, surging and throbbing water system, impregnating both soil and water with minute deposits of highly fertilizing qualities.

The main features of the boundary line between Alaska and Canada are the irregular line extending from the head of Portland Inlet in latitude 56 degrees, around the waters of the great archipelago Alexander, at a distance not greater than ten marine leagues from the continental shore, to the 141st meridian west of Greenwich, and the straight line running thence to the Arctic Ocean on that meridian. Where this irregular line meets the 141st meridian rises the great Mount St. Elias, which is in latitude 60 degrees 17 minutes and 34.4 seconds, and longitude 140 degrees, 55 minutes and 19.6 seconds. This peak is about twenty-seven statute miles from the ocean shore.

From a point on the 141st meridian and probably in nearly the same latitude as Mount St. Elias, the boundary line runs true north to Demarcation Point on the Arctic shores—a distance of 660 statute miles.

In this great distance the line crosses comparatively few large streams; at 100 miles it crosses the head waters of the White River, a tributary of the Yukon, flowing to the north-northwest; at 205 miles, an unnamed tributary of the White River. At the last distance on the boundary line the Yukon River lies forty miles to the eastward at a well-known bend and gorge known as the Upper Ramparts. The river continues on a northerly course nearly parallel with the boundary line for seventy-five miles to old Fort Reliance, near the Klondike, and thence trends seventy-five miles northwest by north, to where the boundary line crosses it at 335 miles from Mount St. Elias. The boundary line next crosses a little-known river called the Big Black, a tributary of the Lower Porcupine, at 445 miles; and the Porcupine River, one of the great tributaries of the Yukon, at 510 miles; this is the last river of much size that it encounters. As it runs northward it meets the upper waters of the Old Crow River, which heads in Turner's Pass of the Davidson range; crosses this great range at 595 miles, where the elevation was esti-

mated by Turner to be 7,000 feet; and at 660 miles reaches Demarcation Point on the Arctic shore, about 150 miles west-northwest from the delta of the Mackenzie River in Canada.

This boundary line traverses an almost unknown country; it passes over mountain ranges, reaching 10,000 feet elevation; and the country is utterly impassable for the first 100 miles north of the St. Elias range. The longest stretches of reconnaissance on the line were made by young John H. Turner, of the Coast and Geodetic Survey, from Camp Colonna on the Porcupine, which is sixty miles north of the Arctic circle. With three aids and dog teams he crossed the hitherto unknown Davidson range, at the pass named after himself, at an elevation of 3,500 feet, encountering one blizzard when the temperature was 50 or 60 degrees below zero. His second trip was forty miles south of his camp, toward his colleague, John E. McGrath, at Camp Davidson on the Yukon. He thus reconnoitered 200 miles of the boundary line, through a country never before traversed by a white man, and in his zeal contracted a chronic disease, which carried him off two years after his return home.

Where the Yukon crosses the boundary line its course, which is northwest by north from Fort Reliance, continues in a general direction to the northwest for 235 miles to the deserted Fort

Yukon at the mouth of the Porcupine. All that part of the Yukon River to the eastward of the 141st meridian, and all its principal tributaries come from the southeastward; the principal river under different names reaching within a few miles of the head waters of the Stickeen. The headwaters of the main tributary, the Lewis River, reach nearly into Alaska Territory at the White Pass, the Chilkoot Pass and the Chilkat Pass, just north of Lynn Canal.

The geographical position of Fort Reliance, an old station of the Hudson Bay Company, on the right bank of the river, is latitude 64 degrees 13 minutes, longitude 138 degrees 50 minutes, or 50 statute miles east of the boundary line of the 141st degree. The stream named Klondike Creek enters the Yukon about six or eight miles higher up than Fort Reliance, and on the same side of the river. So far as known it comes from the east-northeast for about one hundred miles, and is reported navigable by canoes for forty or fifty miles from its mouth.

Whatever doubt has been cast upon the position of the whole Klondike district being in British Columbia must have arisen from a misunderstanding of the dispute existing upon the proper location of that part of the boundary line lying eastward and southward of Mount St. Elias. The north or meridian line of the boundary has

been accurately determined at three points—near Mount St. Elias, at the crossing of the Yukon River, and at the crossing of the Porcupine River. The determination of the southern end was made in 1892 by John E. McGrath and John H. Turner, of the United States Coast Geodetic Survey, in combination with a hydrographic party, which carried chronometers for the difference of longitude between Sitka and Yakutat. At Sitka was Fremont Morse, of the Coast Survey. At the Yukon River Mr. McGrath and party spent two years at Camp Davidson, twenty-three miles below Forty-Mile Creek, observing meridian transits of the moon, and occultations of stars by the moon, for longitude. His observatory being a little distance off the 141st meridian, he measured to that meridian and marked it. Mr. Ogilvie, on behalf of the Canadian Government, also observed for the longitude at another and independent point, and then measured to the 141st meridian.

The latest information places the two independent determinations of this meridional boundary line within the width of a few feet. So there cannot be the remotest possibility of any friction between the two governments upon this question. We know the strong and high character of Mr. McGrath, and Mr. Ogilvie has likewise a reputation of the highest character. The only

local dispute that could possibly arise would be in the Forty-Mile Creek district; because the boundary line crosses sharp, steep, mountain ridges 2,500 and 3,000 feet high and an inferior instrumental means might cause a slight doubt of the direction in some case. However, no dispute has arisen in the district, nor is it likely that any will occur. There is no doubt that the line has been satisfactorily laid down by Mr. Ogilvie or some of his assistants.

In quitting the subject, the longitude station of Mr. Turner may be referred to. After obtaining a series of satisfactory results he made a topographical reconnaissance of the Porcupine to its mouth, a distance of 140 miles as the crow flies.

There is little doubt that the Klondike gravel deposits, as far as they go, are the richest ever discovered. In the early days of placer mining in California as rich deposits were found in pockets here and there, but never extensive deposits which averaged as high. There have come no competent opinions or accounts from mining experts, and there are at hand no statements of what any of the deposits have averaged to the cubic yard or ton, but the stories of the generally inexperienced miners, the results in gold dust, and the prices of \$50,000 or more for which claims have been sold, establish the

general richness of the fields. The exceptional concentration of alluvial gold is undoubtedly due to the geographical, or rather topographical conditions under which nature washed the gold into the big sluices, which the valleys are in effect. Descriptive accounts by intelligent mining engineers, mineralogists, and geologists, will be read with great interest whenever they arrive.

The Klondike fields are comparatively limited in extent. The Klondike is a small tributary of the upper Yukon, and the richest deposits are found in the beds of some of the short and small creeks that empty into it. Whether any other placers as rich exist in that region remains to be seen. The placers which have been worked with fair success for five or six years by an increasing number of men are in the beds of water courses, fifty to a hundred miles down the Yukon on the Alaskan side of the boundary, and close to the point where the boundary, the Yukon River and the Arctic circle cross each other. These have now all been abandoned for the far richer diggings found fifty miles or so across the boundary, as it is unofficially supposed to be located.

For the time the placer diggings engross attention, but more significant than the gold found in the frozen gravel of the water courses is the evidence they present of the existence of rich quartz

ledges, from which the gold has been eroded. The veins from which nature has milled this gold are hidden somewhere above, and will be found. A great quartz-mining development in the interior of Alaska, and in the most northerly region of the Northwest Territory, may be confidently predicted. No quartz ledges have yet been found, and none have been looked for. There are the most insuperable difficulties presented by any gold region of the world to overcome before the era of quartz-mining makes a faint beginning.

The country is extremely difficult to prospect. The summers are short, the ground is covered by thick, stunted growths and tangled moss, and is perpetually frozen a little under the surface. The transportation of anything in the way of mining machinery would now be enormously expensive. But the quartz-mining era will come. Already coal deposits of value are announced. The Government of British Columbia is moving to accede to the popular demand for the opening of a trail to the new region through British territory, and already the railroad, which would be pushed north with the aid of provincial subsidies if sufficient resources were discovered, is vaguely talked of. Rich veins of gold, quartz-mills, and railroad locomotives inside the Arctic circle reasonably meet the prolonged

vision. A few months ago a member of the United States Geological Survey, who made a superficial reconnaissance of the Yukon country, predicted the discovery of quartz veins throughout a region 300 miles long.

The Yukon country presents strange and new problems for mining engineering. Present operations are of the crudest, and the gold-pan stage of development has not been passed. The rich gravel lies a few feet under the streams, which are frozen up most of the year. The gravel has to be mined out during the winter, when everything is frozen solid, by sinking shafts and drifting in below the frozen streams, by alternately thawing the ground with fires and hoisting the dirt to the dumps. When capitalists get hold of some of the richer claims, and send in skilled mining engineers, there will be a field for ingenuity and reports of much scientific interest.

Professor J. Edward Spurr, of the United States Geological Survey, has this to say about the Yukon district:

"Our party crossed to the headwaters of the Yukon by the Chilkoot Pass, and proceeded by boat down the Yukon to Forty-Mile Creek. All of the known placer deposits were examined, and the origin of the gold in them was traced to veins of quartz along the headwaters of the various streams entering the Yukon.

"Sufficient data was secured to establish the presence of a gold belt 300 miles in length in Alaska, which enters the Territory near the mouth of Forty-Mile Creek and extends westward across the Yukon Valley to the lower ramparts. Its further extent is unknown. It is the opinion of the geologist in charge of the expedition that it is entirely practicable to prosecute quartz mining throughout the year in this region. He discovered along the river large areas of rocks containing hard bituminous coal. Running in a direction a little west of northwest through the territory examined is a broad, continuous belt of highly altered rocks. To the east this belt is known to be continuous for 100 miles or more in British territory. The rocks constituting this belt are mostly crystalline schists associated with marbles and sheared quartzites, indicating sedimentary origin for a large part of the series. These altered sedimentary rocks have been shattered by volcanic action.

"Throughout these altered rocks there were found veins of quartz often carrying pyrites and gold. Many of the veins have been cut, sheared and torn into fragments by the force that has transformed sedimentary rocks into crystalline schist, but there are others containing gold, silver and copper that have not been badly broken.

"These more continuous ore-bearing zones have not the character of ordinary quartz veins, although they contain much silica. Instead of the usual white quartz veins the ore occurs in sheared and altered zones of rock, and gradually runs out on both sides. So far as is known these continuous zones of ore are of relatively low grade. Concerning the veins of white quartz first mentioned, it is certain that most of them which contain gold carry it only in small quantities, and yet some few are known to be very rich in places, and it is extremely probable that there are many in which the whole of the ore is of comparatively high grade.

"The general character of the rocks and of the ore deposits is extremely like that of gold-bearing formations along the southern coast of Alaska, in which the Treadwell and other mines are situated, and it is probable that the richness of the Yukon rocks is approximately equal to that of the coast belt. It may be added that the resources of the coast belt have been only partially explored.

"Since the formation of the veins and other deposits of the rocks of the gold belt an enormous length of time has elapsed. During that time the forces of erosion have stripped off the overlying rocks and exposed the metalliferous veins at the surface for long periods, and the rocks of the

gold belt, with the veins which they include, have crumbled and been carried away by the streams to be deposited in widely different places as gravels, or sands, or mud. In Alaska the streams have been carrying away the gold from the metalliferous belt for a very long period, so that particles of the precious metal are found in nearly all parts of the Territory.

"It is only in the immediate vicinity of the gold-bearing belt, however, that the particles of gold are large and plentiful enough to repay working under present conditions. Where a stream heads in the gold belt the richest diggings are likely to be near its extreme upper part. This upper part of the current is so swift that the lighter material and the finer gold are carried away, leaving in many places a rich deposit of coarse gold, overlaid by coarse gravel, the pebbles being so large as to hinder rapid transportation by water.

"It is under such conditions that the diggings which are now being worked are found, with some important exceptions. The rich gulches of the Forty-Mile district, and of the Birch Creek district, as well as other fields of less importance, all head in the gold-bearing formation. A short distance below the heads of these gulches the stream valley broadens, and the gravels contain finer gold more widely distributed.

"Along certain parts of the stream this fine gold is concentrated by favorable currents and is often profitably washed, this kind of deposit coming under the head of bar diggings. Gold in these more extensive gravels is often present in sufficient quantity to encourage the hope of successful extraction at some future time when work can be done more cheaply and with suitable machinery. The extent of these gravels which are of possible value is very great."

The future agriculturist and stock-raiser in the region of which Dawson is now the gilded capital, must take into consideration the long and severe winter season, and the frozen moss-covered ground. The land, however, can be made serviceable by turning the surface moss and opening the soil to the influence of the sun and air in summer time. In this way some small areas have been brought under cultivation.

The returned miners report that many large stretches of burnt country have undergone a complete change of vegetation after two burnings.

The cereals have hardly been experimented with, though there is a tradition that the Hudson Bay Company at Fort Yukon had a small quantity of barley coming to maturity.

Barley has been raised in small quantities at Forty-Mile Creek. Potatoes ~~have~~ done well at

all points on the river, but the seed has been difficult to obtain.

Stock can be kept by using care in providing abundant winter feed by ensilage, or curing natural grass hay, and housing it in the winter.

In summer time an abundance of the finest grass is to be found almost everywhere for hundred of miles in the neighborhood of Dawson.

The ingress of gold-seekers along the Klondike has visibly affected the modes of living among the natives, who are now forsaking their more primitive habits for those of the miners. At Forty-Mile Creek members of the Takudh tribe have built themselves log cabins which they inhabit the year round, and they fully appreciate the advantages of stoves and clothing from "the States." The younger Indians are more fastidious in their dress than the average white man. They are industrious and fairly enterprising, many of them working successfully at mining for wages paid by the whites, and some are mining on their own account.

As far back as 1860 a deposit of gold was found in the basin of the Yukon by a prospector named George Holt. He also reported the finding of coarse specimens along the Hootalinqua River. But it was the discovery of gold near Sitka in 1873, followed by the finds in the vicinity of Juneau in 1890, that drew attention to the

possibilities of the newly acquired Territory of Alaska as a gold-producing country. The great abundance of gold was first made known by Joseph Juneau, who prospected in the region around the city bearing his name. In 1885 mining prospectors began to scatter themselves along the rivers Pelly and Hootalinqua, and in the year following much mention was made of the Stuart River as a field for the enterprising gold-hunter. Rich strikes were made in 1892 by prospectors along Miller Creek, a tributary of Sixty-Mile Creek. The progress made in finding gold along the Alaskan and British Columbian Rivers, although giving high promise of future discoveries of gold, was not followed by anything which created a widespread adventurous spirit among people who were outside the mining region.

To the daring spirit of Peter the Great belongs the honor of the Russian expeditions which led to the discovery of Alaska. The czar conceived the ambitious project of founding an American Russia, and thus extending his dominions over three continents. The leadership of these explorations he intrusted to Vitus Behring, a Danish captain in the Russian service. On February 5, 1725, the expedition set out overland through Siberia, and three days later the czar died, but his instructions were faithfully carried out by Catherine, his wife, and Elizabeth, his daughter.

This arduous work of exploring the Siberian coast and waters continued for sixteen years before the Alaskan coast was sighted. The second Kamschatkan expedition was six years in crossing Siberia. It was in the spring of 1714 that Behring and his lieutenant Chirikof put out into Behring Sea, whose waters his chief had discovered on a previous expedition. They had two small vessels. One was commanded by Behring, the other by Chirikof. The little craft became separated at sea, and were never reunited. Chirikof bore away to the east, and during the night of July 15, 1741, sighted land in latitude 55.21. It was afterward disclosed that this was thirty-six hours in advance of Behring's discovery of the mainland of America.

Chirikof sent a party ashore in one of his small boats, to explore the immediate country and secure fresh water. Soon after leaving the vessel they passed around a rocky point and disappeared from sight. As they failed to return at the appointed time, another boat's crew was sent ashore. Soon a great smoke was seen arising from the shore, and two large canoes, filled with threatening natives came out from the land. They refused to board the strange ship, and it dawned upon Chirikof that all the men he had sent ashore had been massacred. This reduced his crew to small numbers, and Chirikof decided to return to the Kamschatkan coast.

The return voyage was attended with frightful hardships and suffering. Scurvy attacked the men, many died, and the others were rendered helpless by sickness. After weeks of this suffering, the vessel reached the Kamschatkan coast, with only the pilot on deck. Chirikof was one of the first stricken with scurvy, but recovered.

Behring's party suffered even greater hardships. After sighting the coast and making a landing, Behring gave orders to lift anchor and return to Kamschatka. The ship became lost in the maze of islands, and was wrecked upon a barren island. There the survivors passed the winter, many of them dying. Caves were dug in the sandbank of a little stream, and a scanty and uncertain food supply was obtained by killing sea animals and resorting to the flesh of dead whales cast upon the beach. Behring died on this island December 8, 1741.

In the spring the handful of survivors constructed a boat from their wrecked vessel and succeeded in working their way back to the Siberian coast, where they were received with great rejoicing, having long been given up for dead.

Among the people who have just returned from the new Klondike gold mines are men who had been for more than ten years facing the dangers and hardships of the frozen North in

the hope of making a rich find, and signally failed. Now they come back with fortunes stowed in their gripsacks and stories of untold millions to be picked up in the country of which so little is known. The new El Dorado lies just across the Alaskan boundary, in British territory. It is of recent discovery; but already there are at least 5,000 people on the ground, and more are flocking in that direction. The discovery of the Klondike region presents a story that is uncommonly interesting. Around Forty-Mile Camp, on the Yukon, is a tribe of Indians known as the Slickers, and with them is a man who, years ago, was known as George Cormack, but who is now called "Slick George." In September last, at the head of a party of Indians, he left his hut near Forty-Mile Camp, and started in a southerly direction, saying that he intended to find a new gold field before his return. He came back two weeks later and startled the miners with the announcement that forty miles away there was gold to be found in plenty. The streams abounded with the yellow metal, and all that was needed was for somebody to pick it up. Many persons flocked to the place, and in time the word reached Forty-Mile Camp that untold riches could be found along the bottom of Bonanza Creek and its tributaries. Men who had failed at the former camp

immediately packed up their belongings and set out for the new fields. It was a hard and trying journey, but that was nothing with the promise of millions at the end of the route.

The Yukon River, which crosses Alaska from east to west and empties into the Pacific a little south of Behring Strait, is said to be a mightier stream than the Columbia. River steamers navigate it hundreds of miles from its mouth. Passengers from Seattle are usually transferred from ocean steamships to these vessels at St. Michael's Island, near the mouth of the Yukon. The source of the river is in British territory, 200 or 300 miles south of the point where the stream crooks away westward into Alaska. In fact, it may be said to drain very nearly the same mountain slopes as the Fraser, Columbia, Peace, and Stickine. It was natural, therefore, to expect that gold would be found along the main channel of the Yukon or some of its tributaries. Explorers were sent out from two bases. One set went up the river from its mouth, traversing the whole of Alaska from west to east, and another pushed up from the south, from the vicinity of Juneau, through Chilkat Pass. An American company established trading stations near the source of the river five or six years ago. Most of the prospecting has been done either between this locality and the point where the river

crossed into Alaska, or within the first 100 miles over the line. Fine gold dust in small quantities was found at the mouth of the Porcupine River, a stream that joins the Yukon about 100 miles west of the boundary, and also near the mouth of Forty-Mile Creek, most of whose course lies in Alaska, but which crosses into British territory before emptying into the big river. Fort Cudahy is situated here, and Circle City, where there were other mining camps, is about fifty miles further west. These places are about 1800 or 1900 miles from the sea, if one travels by steamboat, and in the winter are completely cut off from the outer world. The Klondike River is not to be found, or, at least, is not easily identified on most maps; it is a small stream, like Forty-Mile Creek, and discharges into the Yukon not many miles from the eastern boundary of Alaska. Still, Seattle papers advertise transportation to the Klondike region to Fort Cudahy and Circle City, by ocean steamers that transfer to river boats at St. Michael's Island!

The district is intersected by the 65th parallel of north latitude, and has an Arctic climate. The gravel is frozen solid all the year except for a few weeks, or at most two or three months, and has to be thawed out in some way before the gold can be separated. The streams which supply the water for washing the dirt also

freeze up. Hence placer mining must be conducted there under great disadvantages. The new camp is peculiar for several reasons. The

nadian provincial police do not allow the men to carry arms. If the miners get drunk and fight they use their fists, and the land laws are so good that no claim-jumping is possible. Dawson City now has 4,000 people, and it is expected that 2,000 more will swarm in before snow flies and the trail from Juneau is closed for the winter.

The strike was made in the Klondike region in August and September, 1896, but the news did not get even to Circle City until December 15, when there was a great stampede over the 300 miles intervening between there and the newer fields. During the winter, when the streams entering into the Klondike were frozen solid, work in 100 claims was prosecuted, and heaps of frozen gravel were piled up on the banks of the streams awaiting to be thawed out in the spring. The gold is found under from 12 feet to 20 feet of sand and gravel at the bed of the creek. Through the ice the miners burned holes with fire, and then blasted out the pay dirt on the benches of bed rock. On August 12 George Cormack made the first great strike on Bonanza Creek, and on August 19 seven claims were filed in that region. Word got to Forty-

Mile and Circle City, but the news was looked upon as a rumor. On December 15, however, authentic news was carried to Circle City by J. M. Wilson, of the Alaska Commercial Company, and Thomas O'Brien, a trader.

The towns of Circle City and Forty-Mile, on the Yukon, were deserted a week after the news reached there late in the spring, and the residents adjourned *en masse* to the Klondike.

The country covered by Klondike camp is small in area, extending from the mouth of the river only nine miles west. There is an immense reach of country beyond which has not as yet been prospected. At this rate Alaska's population will be trebled in a year. Those who made the 300 miles first struck it richest. Of all the 200 claims staked out on the Bonanza and Eldorado Creeks not one has proved a blank. Not less than 300 claims have been staked out. The largest nugget yet found was picked up on Claim No. 6, on the Bonanza, and was worth \$260. Some have brought out but a portion of their clean-up, preferring to invest other portions in mines they knew to be rich. Among the most lucky are J. J. Clements, of Los Angeles, who has cleaned up about \$170,000; he brought out \$50,000 and invested the rest; Professor T. C. Lippy, of Seattle, who brought out about \$50,000 and claims to have \$150,000 in sight, and thinks his

mine is worth \$500,000 or more; William Stanley, of Seattle, who cleaned up \$100,000, and Clarence Berry, the same. All this gold is the clean-up of last winter's work.

The stories of the returned miners vary only in the details of their good fortune. L. B. Rhodes, an old miner, tells the following story: "I am located on Claim No. 21, above the discovery on Bonanza Creek. I was among the fortunate ones, as I cleared about \$40,000; but brought only \$5,000 with me. I was the first man to go to bed rock gravel, and to discover that it was lined with gold dust and nuggets. The rock was seamed and cut in V-shaped streaks, caused, it is supposed, by glacial action. In these seams I found a clay which was exceedingly rich. In fact, there was a stratum of pay gravel 4 feet thick upon the rock, which was lined with gold, particularly in these channels or streaks. The rock was about 16 feet from the surface. That discovery made the camp. It was made on October 23, 1896, and as soon as the news spread everybody rushed to the diggings from Circle City, forty miles away, and every other camp in the district. There was a lack of food. We had nothing but what was sledged from Forty-Mile. Flour sold as high as \$45 a sack, and shovels at \$18. I invested my money in another claim, a two-thirds divided in-

terested in Claim No. 23. If I had not bought in I could have brought out at least \$25,000, but the investment there is the best security, and pays interest from 15 to 25 per cent. a year."

The *Alaska Mining Record*, published in Juneau, contains letters stating that the stories told are not exaggerated. "One hundred dollars to the pan is very common. One can hardly believe it, but it is true, nevertheless. A very hard country to live in on account of the mosquitoes and poor grub, but healthy and a show to make a ten-strike. There is nothing a man could eat or wear that he cannot get a good price for. First-class rubber boots are worth from an ounce to \$25 per pair. The price of flour has been raised from \$4 to \$6 and was selling at \$50 when we arrived, as it was being freighted from Forty-Mile. One boat has already reached here, and another is expected to-day. Big money can be made by bringing small outfits over the trail this fall. Wages have been \$15 per day all winter, though a reduction to \$10 was attempted; but the miners quit work." Another letter says: "It will pay to bring anything here which can be carried in; the demand is good, and prices such that there is money in anything that can be brought in."

In speaking of American miners in the Yukon and through Canadian territory, Governor Mack-

intosh, of the Northwest Territories, said that those who have made discoveries and complied with the laws are on the same plane as British subjects, and entitled to the same rights, privileges and protection. This, according to Governor Mackintosh, is in line with the policy of the Canadian Government in its desire to encourage the best American miners, who are considered the best miners in the world, to go to the Northwest Territory and assist in its development.

He then spoke of the unwritten laws of the district and of the sense of honor that prevails among the men who have gone into the district as miners. Inspector Strickland had told him that he had walked into a cabin in which more than a quarter of a million dollars lay unprotected. While its value was recognized on all sides, no attempt was made at any time to steal it. Food that is cached along the trails is unmolested. If a hungry man passes along he takes a nibble, but that is all. There are unwritten laws of the miners that have a foundation of honor, and if any violation of the customs of the district were perpetrated it would be a sorry day for the person who tried to take advantage of the trust imposed upon all.

Governor Mackintosh said that in this much-discussed district the gold area is not confined.

There are nearly 9,000 miles of waterways connected with and tributary to the McKenzie, Porcupine, Laird, Pelly, Lewis and Yukon Rivers, not mentioning the Stuart and Hootalinqua Rivers. Some of these are very large creeks from twenty to fifty feet wide. All have gold-bearing gravel.

For instance, Dominion Creek appears to promise quite as rich a yield as the Klondike. "To be candid," said Mr. Mackintosh, "it would seem as though this placer area will be inexhaustible, and possible to work for years to come, while the old Hudson Bay explorers state that some of the quartz mines north and west of the Yukon will yield from \$200 to \$300 per ton, free-milling ore. Added to this the timber supply in various sizes follows all of the water stretches. Coal has been found in the valley of Forty-Mile Creek and at other points."

The governor states that his disposition is not to encourage wild excitement or to foster an undesirable quality of emigration. He does not think that any one should go who is not well provided with everything demanded by the conditions of the rigorous climate.

The area hastily examined during last season is but a portion of the great interior of Alaska. That gold occurs over a large extent of country has been determined, but the richness of the

various veins and lodes remains to be ascertained by actual mining operations. Gold is known to occur in the great unexplored regions south of the Yukon, because of its presence in the wash of the streams, and it is quite probable that the Yukon gold belt extends to the north and west, but this can be determined only by further exploration.

There is a comparatively unknown region north of Cook's Inlet. Maps show that the Alaska Mountains are broken down north of Cook's Inlet, and that the Sushitna River extends almost directly north 150 miles, when it branches, one large tributary coming from the west and another from the northeast. The latter was followed up northward 200 miles to a large lake.

"Talk about it being hot here to-day," said one bearded Yukoner to a Seattle man, "why, this is cool weather compared to what we get during the Alaskan summer along the valley of the Yukon. The sun swings around there in a circle for three months, just dipping below the horizon part of the time for a night which is from three minutes to three hours long. It is one day for six weeks, when the sun never sets, and the only night is one conjured up in the imagination. Talk about it being hot. Why, up in the Yukon Valley in the foothills, the

average temperature during the summer is 105 to 120 degrees. It never rains and the heat is pitiless. The atmosphere is dry, however, and one can stand the heat better than in India, say, where the heat is mixed with humidity."

"There is a peculiar thing about the valley of the Yukon and all southeastern Alaska, in fact," says Mr. Swineford, who from 1885 to 1890 was governor of that part of the United States, and is now government inspector of surveyors-general and district land officers, and who owns large mining properties in Alaska. "That is the perpetual verdure during the summer months. No matter how hot it is nor how dry—the rain may not fall from the beginning of June until the close of summer or the last of August—yet the grass and shrubbery will be as green and luxuriant as it is here now. Your verdure this summer, on account of the excessive rainfall, is something like that in the interior of Alaska, dark green and sturdy, full of life, like a healthy, robust man. In Alaska, however, the luxuriance and virility of the verdure is due to the fact that the ground never thaws below a depth of six to ten feet. No matter how hot it is, the hotter the better, the frozen ground continually gives up to the roots of the grasses and growing grains a life-giving moisture.

"The Yukon Valley is like the valley of the Red

River of the North in Minnesota. Although the mines are rich and easily worked it costs a small fortune to get them in condition to mine, and it costs lots of money to live and to transport the gold dust to a market. The average young man who makes up his mind to strike for the Yukon gold fields imagines that his journey is ended when he reaches Juneau—that he has but to step across the country and he is at the Yukon. He will find, however, that he is greatly mistaken. On arriving at Juneau he will have to get an outfit that will cost him from \$500 to \$600, and then he will have to cross a wild mountainous country, along Indian trails. He will have to cross four large lakes and make three portages before he reaches the Yukon River. Arrived there, however, it is comparatively easy sailing until he comes to a likely tributary, up which he will have to work to a placer field.

“In summer the heat is something awful in the valleys of those little tributaries, and the miner is compelled to wear a closely-woven mosquito netting over his face and gloves on his hands, to keep from being blinded by the mosquitoes and black flies, which swarm in countless numbers in the valleys. So bad are they that the sleeves at the wrists and the trousers at the ankles must be tied tightly, or the little pests will crawl inside. Their sting seems to be more venomous than

that of the mosquito and black fly here. It is impossible to keep domestic animals in the valleys—the flies will blind them in a day. All the wild animals, the reindeer, elk, etc., remain on the mountains during the summer.

“What the country needs above all things is communication with the outside world. If the government at Washington would make some arrangement whereby the Canadians could get a port of entry on the disputed part of the coast, it would be a great boon to Alaska, as well as to this part of the Northwest Territory. Most of the men who “hit it” are Americans, whose gold will go to San Francisco and the United States. Because of the lack of adequate communication with the civilized world the miners are in constant fear lest supplies should give out. Many articles can be had but for a limited time after the arrival of a steamer, and those who are not fortunate enough to get a supply at that time must do without for weeks and months, no matter how much gold they may have to make purchases with. The scarcity may be one of provisions, window sashes, or gum boots, but always there is a scarcity there of some important article. Generally there is never enough of anything, and only the opening up of communication with the coast by some other route than the mouth of the Yukon offers any prospect of ade-

quate relief. If the Canadians had a port of entry they would have commerce coming down the river from the direction of Juneau, and the country would not be dependent upon the scanty supplies coming 1,900 miles up the Yukon from Behring Sea."

There are lots of creeks as yet unprospected and lots of gold to be had, and it is all right if you go fully prepared for the worst. The first year must be practically lost, so the only show is for a man to buy some claim or go to work. The rate of wages will fall, and he will be again badly off.

The country is well timbered about Klondike. The summer is dry, hot and pleasant. Grain is mostly a failure. Turnips and radishes will flourish, and potatoes, though small, will grow well. Cabbages will not head at all. Fodder is abundant, and cattle could be easily kept if they were taken into the country.

The growth of plants is rapid after the snow disappears. In June the sun sets about 10:30 P.M. and rises about 3 A.M. Even at midnight, however, it is almost as light as at noonday.

The mean temperature of Klondike for the four seasons is as follows:

Spring, 14.22; summer, 59.67; autumn, 17.37; winter—30.80.

Think of it—a mean winter temperature of

thirty degrees below zero! The winter fall of snow is between five and ten feet.

The following table of distances on the overland trip will be found of interest:

	MILES
Seattle to Juneau	899
Juneau to Dyea	100
Dyea to foot of canyon	7
Foot of canyon to Sheep Camp	5
Sheep Camp to summit	5
Summit to head of Lake Lindermann	9
Lake Lindermann (length)	6
Foot Lake Lindermann to head Lake Bennett	1
Lake Bennett (length)	25
Foot Lake Bennett to head Tagish Lake	2.7
Tagish Lake (length)	16½
Foot Tagish Lake to head Mud Lake	5
Mud Lake (length)	20
Foot Mud Lake to Grand Canyon	3½
Grand Canyon to White Horse Rapids	2
White Horse Rapids to Tahkeena River	16
Tahkeena River to head Lake Le Barge	14
Lake Le Barge (length)	81
Foot Lake Le Barge to Hootalinqua River	30
Hootalinqua River to Big Salmon River	34
Big Salmon River to Little Salmon River	37
Little Salmon River to Five Fingers	60
Five Fingers to Fort Selkirk	58
Fort Selkirk to Stuart River	118
Stuart River to Sixty-Mile	21
Sixty-Mile to Dawson City	49
Dawson City to Forty-Mile	52
Forty-Mile to Fort Cudahy	40
Fort Cudahy to Circle City	240

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The following table gives the places and distances when making the outside trip by way of St. Michael's:

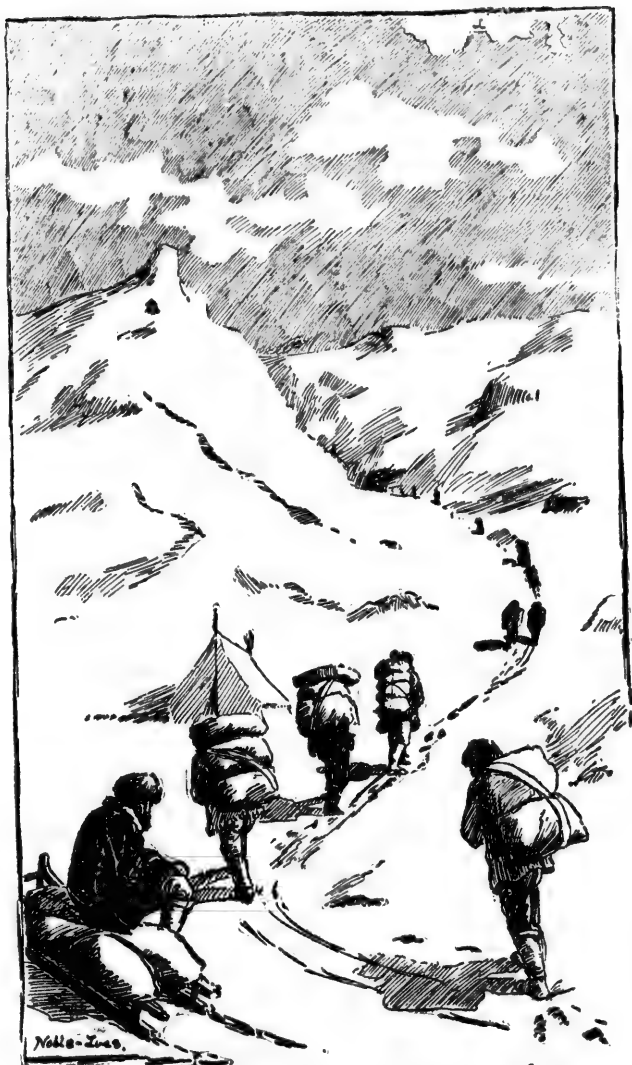
	MILES
Seattle to St. Michael's.....	8,000
St. Michael's to Kutlik.....	100
Kutlik to Andreafsky....	125
Andreafsky to Holy Cross.....	125
Holy Cross to Koserofsky.....	5
Koserofsky to Anvik.....	75
Anvik to Nulate.....	225
Nulate to Novikakat.....	145
Novikakat to Tanana.....	80
Tanana to Fort Yukon.....	450
Fort Yukon to Circle City.....	80
Circle City to Forty-Mile.....	240
Forty-Mile to Dawson City..	52

From Juneau the distances to various points are as follows:

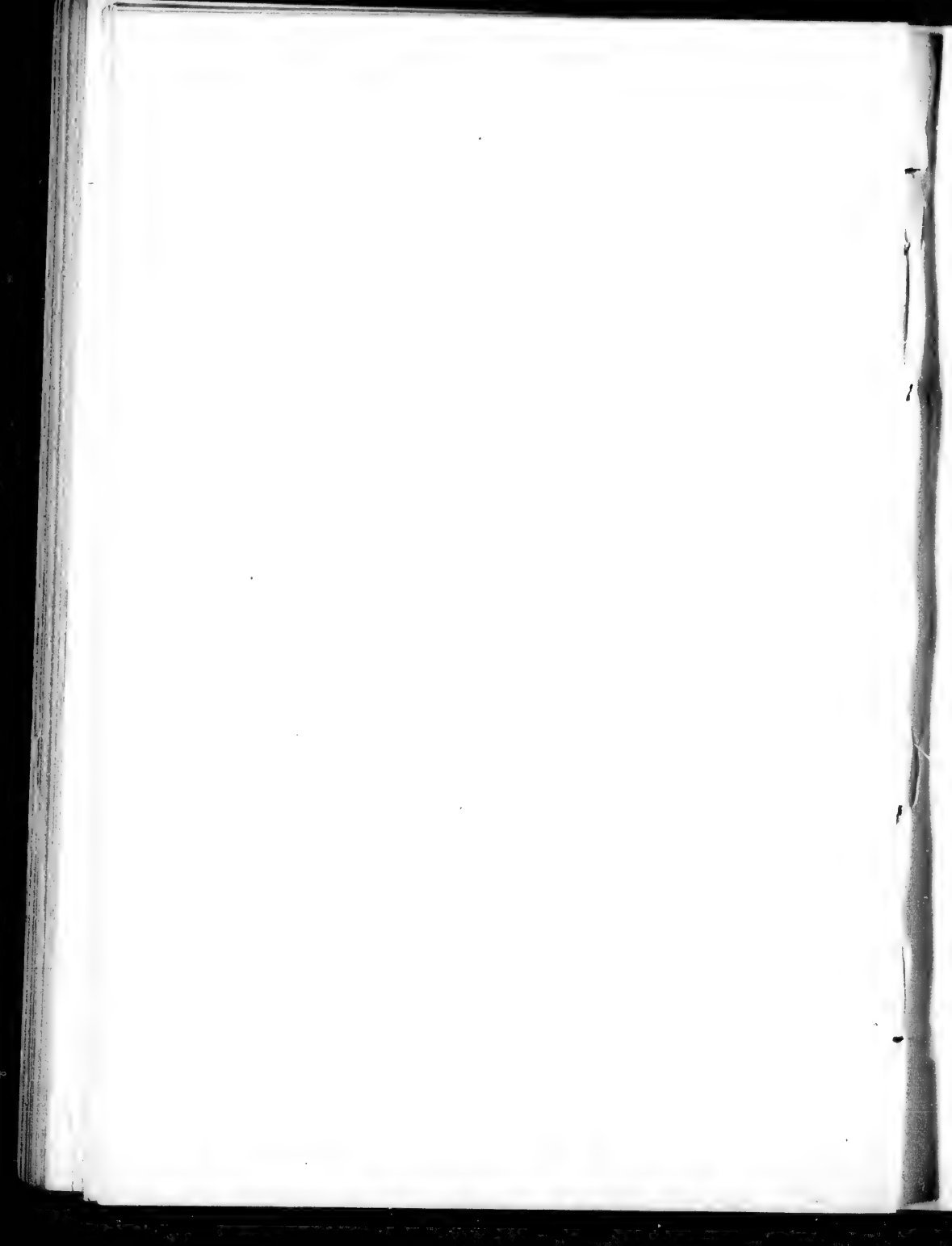
	MILES
To Haines (Chilkat).....	80
To head of canoe navigation.....	106
To Summit of Chilkoot Pass.....	115
To Lake Lindermann Landing.....	124
To head of Lake Bennett.....	129
To boundary line between British Columbia and Northwest Territory.....	139
To foot of Lake Bennett.....	155
To foot of Caribou Crossing.....	158
To foot of Takou Lake.....	175
To Takish House.....	179
To head of Mud Lake.....	180

	MILES
To foot of Lake Marsh.....	200
To head of canyon....	225
To head of White Horse Rapids.....	228
To Tahkeena River.....	240
To head of Lake Le Barge.....	256
To foot of Lake Le Barge.....	287
To Hootalinqua.....	320
To Cassiar Bar.....	347
To Little Salmon River.....	390
To Five Fingers.....	451
To Pelly River.....	510
To Stuart River.....	630
To Forty-Mile Creek.....	750

From Juneau to Sitka the distance is 160 miles; Juneau to Wrangel, 148 miles; Juneau to Seattle, 899 miles, and to San Francisco, 1,596 miles.



The Ascent of Chilkoot Pass,—Page 67.



THE KLONDIKE TRAIL.

THERE are at least six routes to the Klondike.

The first and easiest is by steamer from San Francisco, or Seattle, to St. Michael's Island near the mouth of the river.

The second is over the Chilkoot Pass.

The third crosses the White Pass.

The fourth leads from Telegraph Creek on the Stickeen River to the headwaters of the Lewis branch of the Yukon.

The fifth is an overland trail from Edmonton to the headwaters of the Pelly.

The sixth is by water down the Athabasca and Mackenzie Rivers to Fort Simpson, and from thence over the mountains to the head of the Porcupine, a tributary of the Yukon.

This route may be varied by making Winnipeg instead of Edmonton the starting point, and so reaching the Athabasca by way of Lake Winnipeg.

All will be found described in the following chapter.

The all-water route, by way of the mouth of

the Yukon, is a fifteen days' voyage from Seattle to St. Michael. One goes straight out into the Pacific toward Japan for 1,800 miles. Then one turns through Unimak Pass to the Aleutian Islands, and touches for a day at the port of Dutch Harbor. Thence one sails away to the North across Behring Sea and past the Seal Islands, 800 miles beyond, to the port of St. Michael. This is a transfer point, and the end of the ocean voyage. At St. Michael, after a wait of anywhere from a day to two weeks, granting that the river is open, one may go aboard a flat-bottomed river steamer for another fifteen or twenty days' voyage up the Yukon.

If the traveler should arrive at St. Michael as early as August 25, he would be almost assured of reaching the mines before cold weather closed river navigation, but arriving later than that his chances would be good for either wintering on the desolate little island of St. Michael, or traveling by foot and dog sled the 1,900 miles to the mines after the river had frozen into a safe highway. As to the probabilities of the ocean route, a boat leaving Seattle or San Francisco by August 10 should make safe connections at St. Michael.

As early as August 1 the *New York Sun* warned its readers that: "People who have the gold fever do not realize that ships and steamers

starting for St. Michael, except in few cases, cannot hope to get through to Klondike the same year. It has already been reported that there is very little water in the Yukon this year, and it is doubtful whether the regular river steamers can get through before the winter freeze-up. Parties starting for the gold fields in steamers, on the decks of which are sections of river boats, cannot put their portable craft together in time, on reaching St. Michael, to float boats and reach Dawson City before the season closes. At no season can gasoline launches be used to advantage on the river, except for transporting goods part of the way up stream."

The only practical vessel for river trade is a small flat-bottom river steamer drawing from one to two feet of water, which can pass over the sand bars. When the present rush for St. Michael is over a crowd of fortune-seekers will head for the Juneau route, which is open nearly all the year. A number of steamboats will be put on the Yukon next summer; twenty are now building. At present, however, there are but three boats plying above St. Michael on the Yukon. They are flat-bottomed, stern-wheel boats, such as are used on the Missouri River. A fourth one is building. The two companies owning these boats having a monopoly on the supplies of the region.

The North American Transportation and Trading Company run three steamers from San Francisco to Seattle, thence to St. Michael, and river boats from St. Michael up the Yukon River to Circle City. A ticket on the steamers Portland or Excelsior, from Seattle to Circle City costs \$150, and it takes the boats fifteen days to make the trip. This will not suit your purpose if you want to start earlier than May 1. The last boat leaves San Francisco on August 30.

"We have about 5,000 tons of provisions on the river," said Louis Sloss, president of the company, "and we will send in as much more as possible. It is impossible, however, to know whether there will be enough for the people, for I understand that by the close of the open season Dawson will have three or four times as many people as it did a month or two ago. If there are not enough provisions the Alaska company may be blamed, but it will not be our fault. Our boats can carry only so much, and if that is not enough it is not our fault. We advise every one to travel overland from Juneau, taking provisions with them. If this were done a probable famine would be avoided.

"The Excelsior will sail from here to St. Michael, where it connects with the river boats to Dawson. These river boats are stern-wheelers, like the Sacramento river boats, and

each of them tows a barge loaded with provisions. The boat that connects with the Excelsior will be the last to go up the river this season. It will arrive at Dawson early in September. The river usually freezes from the first to the fifteenth of October. Our boat can return down stream to St. Michael before the river closes, but it can not go up again until next year."

The Excelsior allows 150 pounds of baggage to each passenger and no more. The space is too valuable to allow additional accommodations.

The distances from Seattle by the ocean route, according to Mr. Sloss, are:

	MILES
To St. Michael.....	2,850
" Circle City.....	4,350
" Forty-Mile.....	4,600
" Klondike.....	4,650

Five out of every six miners, however, that start for the Yukon gold regions before June, 1898, will probably go in by way of Juneau and either the Chilkoot or the White Passes. All the first of the rush has been through the former, and hundreds of tons of freight are already piled there awaiting shipment. Four days after leaving Victoria, British Columbia, you are at Juneau. You already begin to sniff the placers from afar. Away off to the north are

the huge white bulwarks which you must cross before you can reach the Eldorado. Between you and their summits are the league-long levels of snow, and cold Nature's white death rose. You will find Juneau a strange little town, damp, half-frozen and huddled close to the mouth of an island bay. The queer little houses are dismaying. The strange-looking Chilkats walk about peering from beneath their hooded furs. Fish, not gold, is their ambition.

Occasionally one appears leading in leash half a dozen wild-looking dogs. As the camel is the ship of the tropic desert, so are these dogs the little steam engines of the Arctic.

The dominion authorities have sent customs officers to the head of the Lynn Canal and to Lake Tagish. There is a collector at Fort Cudahy, only fifty miles from Dawson City, and these arrangements, backed up by a strong force of police, are considered ample for the protection of revenue just now.

The greatest question of all is one of communication. It is reported that a pack trail exists for twenty of the eighty miles which separates the coast from the first post to be established at 60 degrees of north latitude in undisputed British territory. If so, a narrow-gauge railway can be built where there is a pack trail. The cost would not be great, and if cars could be hauled

twice a day over the mountains facing the coast, a tremendous obstacle would be overcome; because in winter it is impossible to cross the mountains except at the risk of life, and to be caught in a storm would be fatal. The mounted police force will be increased from 20 to 100.

Mounted police posts will be established at distances of fifty miles apart up to Fort Selkirk. These will be used to open up a winter road, over which monthly mails will be sent by dog trains. If possible a telegraph line will be constructed over the mountains from the head of the Lynn Canal to the first post. By the present method of transportation over the pass, by horse and Indian packing, it is estimated that it will require six months to get the present accumulation out of the way, to say nothing of that now daily piling up at Dyea. The distance over to the divide is thirty miles, and the ordinary outfit of the miner is 1,800 pounds, three days being consumed in making a round trip. Two hundred pounds is a load for a pack animal, while the Indians carry from 75 to 150 pounds apiece. There are now 200 Indians and 300 horses engaged in packing over this trail, assisted by 1,000 miners, and tenderfeet.

It is suggested that army officers or good road engineers might find an easy solution by organizing the entire gang, and constructing a

first-class wagon road, a feat that could be accomplished in less than thirty days.

One correspondent writes: "There is plenty of good prospecting ground for years to come, but it is better to go about it in a systematic manner than to rush off at half-cock. As to reaching the diggings by the way of Dyea, I have to say this: I will go in that way in the spring, and by using a sled carry 1,000 pounds of supplies, whereas the men who are now attempting that route will have a hard time to get in with 250 pounds. You see in the spring all the gulches from Dyea to Lake Lindermann are filled with snow and ice. You can drag your sled over them easily. At present you must pack your goods or hire Indians.

"These Indians are sharp and will get white men to bidding against each other. The man who pays the highest will secure their services. Already the Indians have run the price per pound up to twenty-five cents and more. After you reach Lake Lindermann you build a raft of poles and push along to its end; then you have a portage of a couple of miles before you reach Lake Bennett. Here you want a boat; but if you think you will get it easily you may be greatly mistaken. The timber is small; it is hard work to get a tree that will produce 60 feet, and you need about 250 feet."

In approaching Juneau the vessel is often subjected to the fierce winds which sweep down the valley of the Takou River. If there is a strong north or northwest wind it comes like a demon roaring out from the Takou, lashing the water into foam in its rage, and tossing volumes of spray clear over the top of Grand Island. When the steamer has come around to the head of the island it takes the scow in tow, and in about twenty hours from the time of leaving it enters the mouth of the Dyea River near Chilkoot, and the salt water journey is ended.

Here on a sandpit about a mile below Healy & Wilson's trading posts, the outfits are taken from the scow and piled upon the beach. Each man must look out for himself now; the guardianship of your baggage by any carrying company is ended. Juneau is nearly a hundred miles behind you. Immediately in the foreground is the ranch and store owned by Healy & Wilson, and beyond in their mantles of snow rise the coast mountains, cold and severe, striking a feeling of dread into many a heart; and beyond this frozen barrier there stretches away hundreds of miles the vast country of the Yukon, an expanse so wide that it is limited only by the extent of man's endurance. But haste must be made in the sorting of outfits and getting them above tide water. Most miners camp near by in

the edge of the woods, perhaps taking one or two meals at the trading posts, which can be had at the price of fifty cents each, others find both board and lodging there until they are ready to push on.

Now for the first time the miner begins to realize that the proper outfit for a trip of this kind is the result of experience, and the longer he has been in this country, and the more thoroughly he knows it, just so much more care is used in the selection and packing of his outfit. A careful and thorough examination should be made to see that nothing has been lost or forgotten. Here he bids farewell to hotels, restaurants, steamboats and stores—in fact to civilization, and is a “free man” to pursue his course how and where he will; beyond all conventionalities of society, and practically beyond all law, so far as it is the outgrowth of organized governments.

Going up the Dyea River, five miles on the ice will bring one to the mouth of the canyon. Here in the woods a comfortable camp can be easily arranged. The tent is pitched on top of the snow, the poles and pins being pushed down into it. While some are busily engaged in building a fire and making a bed, the best cook of the party prepares the supper.

If you have no stove a camp fire must be built,

either on an exposed point of rock or in a hole dug down in the snow; if you have a stove it can be quickly arranged on a "grindstone" inside the tent, the grindstone consisting of three poles some six or eight feet long, and laid in the snow on which the stove is placed.

The heat from the stove will soon melt a hole underneath, but there will be enough firm snow under the ends to hold it up. For the bed hemlock brush is cut, and laid on the snow to the depth of a foot or more, and this is covered with a large square of canvas on which the blankets and robes are put. When furnished it forms a natural spring bed, which will afford grateful rest after hauling a load all day.

Dyea Canyon is about two miles long, and perhaps fifty feet wide. A boat cannot go through it, but in the early spring miners go through on the ice, bridging with poles the dangerous places or openings. After the ice breaks up it is necessary to go over the trail on the east side of the canyon. The trail was built by Captain Healy at his own expense, but it is little used, as most miners go through the canyon before the ice breaks up.

The camping place beyond the canyon is a strip of woods some two or three miles long, known as Pleasant Camp. Its name is something of a misnomer, for there is not even a log

shanty there; some woods, however, do give a kind of shelter, and, as everywhere else along the road, there is plenty of snow.

From here the ascent is gradual, and the next and last camp in timber before crossing the summit is known as Sheep Camp. This is at the edge of the timber, and no wood for a fire can be gotten any higher up. This camp is not usually broken until all of the outfit has been placed on the summit. When the weather is favorable everything except what is necessary for a camp is pushed a mile and a half to Stone House, a clump of big rocks, and then to what is called the Second Bench.

Care must be exercised in soft weather, or everything is liable to be swept from the bench by a snowslide or an avalanche, and should this happen the Indians will prove of great assistance in recovering part of the things. With long slender rods, tipped with steel, they feel down in the snow and locate most of the large packages, which, without them and their feel-rods one would never find.

At Sheep Camp the summit towers above you about 3,500 feet, but the pass is some 500 feet lower. No further progress can be made until a clear day, and sometimes the weather continues bad for two or three weeks, the mountain top hidden in thick clouds, and icy winds hurling

the new-fallen snow in every direction, or driving the sleet in the face of any one bold enough to stir out of camp and peep up at that almost precipitous wall of snow and ice. But sunshine comes at last, and the wind grows still.

Now comes the tug of war to get the outfit to the summit. For 600 feet every step must be cut in the ice, and so steep is that that a person with a pack on his back must constantly bend forward to maintain his equilibrium. The first load planted on the summit of the pass, a shovel is stuck in the snow to mark the spot; then back for another pack, and fortunate is he who gets his whole outfit up in a single day.

Indians may be hired to do the packing, and their rates vary slightly, but the regular price has been five dollars a hundredweight from the second bench to the summit, or fifteen cents a pound from Healy & Wilson's to the lakes. These prices have been shaded a little the past season, and some outfits were packed over the lake at thirteen cents a pound; now the rates are twenty-five cents a pound. The reason for the previous cut in price was that many miners insisted on doing their own packing, and that their work was much assisted by a tramway device, which was operated last season with more or less success by one Peterson, whose inventive genius led him to believe that a simple arrangement of

ropes and pulleys would greatly help in getting outfits up the steeper places.

A small log is buried in the snow, and to this dead man a pulley is attached through which a long rope is passed, to the lower end of which a Yukon sleigh is attached, and the empty box on the sled fastened to the upper end of the rope is then filled with snow until its weight becomes sufficient to take it down the incline, thus dragging the other one up.

The snow was found too light, but with three or four men as ballast in place of snow it worked well, and saved a good deal of packing. When the last load has reached the summit, and the miner stands beside his outfit looking down toward the ocean, only twenty miles away, he can feel that his journey has fairly begun, and as he turns he sees the descending slope melting into the great valley of the Yukon.

The descent for the first half-mile is steep, then a gradual slope to Lake Lindermann, some ten miles away. But there is little time for resting and none for dreaming, as the edge of the timber where the camp must be made is seven miles from the summit. Taking the camping outfit and sufficient provisions for four or five days, the sleigh is loaded, the rest of the outfit is packed up or buried in the snow, the shovels being stuck up to mark the spot.

This precaution is necessary, for storms come suddenly, and rage with fury along these mountain crests. The first half-mile or more is made in quick time, then over six or seven feet of snow the prospector drags his sleigh to where there is wood for his camp fire. At times this is no easy task, especially if the weather be stormy, for the winds blow the new-fallen snow about so as to completely cover the track made by the man but little ahead. At other times, during the fine weather, and with a hard crust on the snow, it is only a pleasant run from the pass down to the first camp in the Yukon Basin.

The rest of the outfit having been brought from the summit, the next move is to Lake Lindermann, about three miles distant. The route now lies seven miles across the lake to its outlet, down the outlet three or four miles in a northeasterly direction to Lake Bennett, down to the foot of this lake, twenty-five miles, then by the river four or five miles, until the Takou Lake is reached. The lake is some twenty miles long, and empties in a mud lake through an outlet three miles long. Mud Lake is about ten miles long, and at the foot of it open water is usually found in April.

Open water will probably be passed before reaching this point in the rivers connecting the lakes, and firm ice at the sides affords good sled-

ding, but at the foot of Mud Lake a raft or boat must be built. Dry timber can be found along the shores with which to build a raft, which will take everything to the Lewis River Canyon, about forty miles to the northwest.

The course down the lakes has been much in the form of a horseshoe, and now bears to the west instead of the east.

Before reaching the canyon, a high cut bank on the right hand side will give warning that it is close at hand. Good river men have run the canyon safely even with loaded rafts, but it is much surer to make a landing on the right side and portage the outfit around the canyon, three-quarters of a mile, and run the raft through empty. The sameness of the scenery on approaching the canyon is so marked that many parties have gotten into the canyon before they were aware of it.

Below the canyon are the White Horse Rapids—a bad piece of water—but the raft can be lined down the right-hand side until near the White Horse, three miles below. This is a box canyon about a hundred yards long and fifty in width, a chute through which the water of the river, which is nearly 600 feet wide just above, rushes with maddening force. But few have ever attempted to run it, and four of them have been drowned.

Of two men who made the attempt in May, '88, nothing was found save a bundle of blankets. Below the White Horse another raft is built, and the journey continued seventy miles to Lake Le Barge. This usually requires three days.

After entering the lake solid ice is found perhaps a mile from the inlet. Camp is made on the shore, and as the ice gets soft most of the sledding is done in the early morning, it being sufficiently light in May to start soon after midnight. This lake is about forty-five miles long, and there is an island about midway. Little snow will be found here late in April, but it will be all glare ice.

After camping on the island, a day's journey will make the foot of the lake, and the sledding is completed. If one expects to stay in the country the sled should not be thrown away, however, as it will prove useful later on.

A comfortable camp should be made here, and the building of a boat commenced. This will require from seven to ten days, and the method of preparing lumber is novel to all who are unused to frontier life. The trees selected should be sound and straight, and twelve inches through the butt. A saw pit about six feet high is built near the tree, and the tree felled and cut into logs about twenty-five feet long. When all is ready, neighbors are invited to the rolling bee to

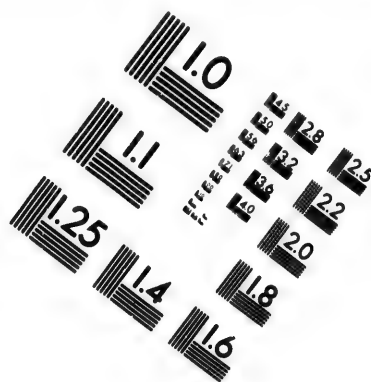
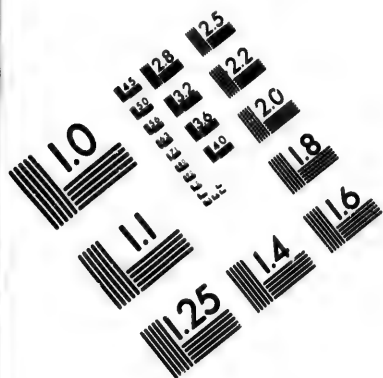
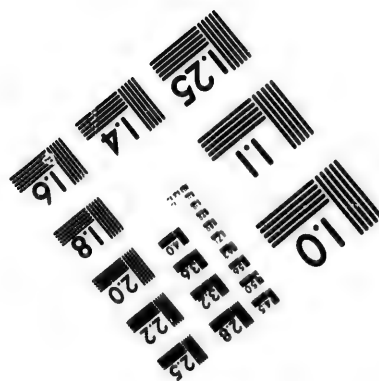
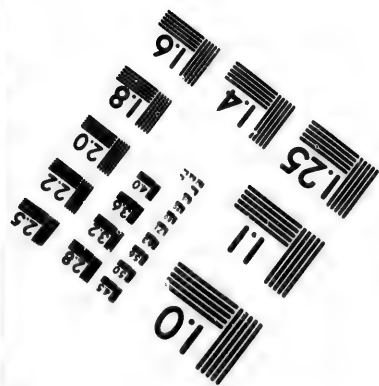
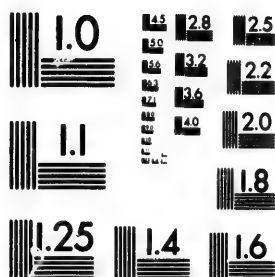


IMAGE EVALUATION TEST TARGET (MT-3)



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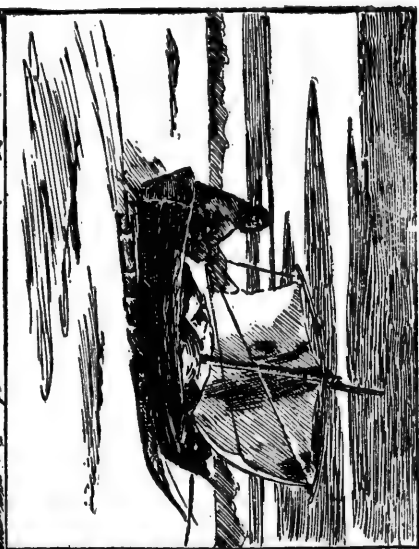
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help in placing the logs on the pit. To make good lumber requires a sharp saw and experience, besides hard work.

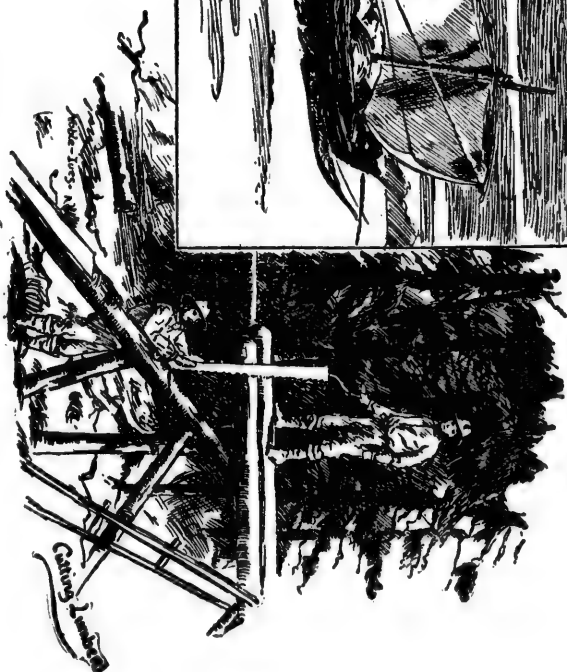
To avoid trouble at this time, the man in the pit should keep his mouth closed.

After the pit is leveled and the log peeled, a square is made on the smaller end, and an exact counterpart on the other; the log is then lined both above and below and squared or slabbed, then it is lined for the boards, an eighth of an inch always being allowed for the saw cut. After the boards are sawed, the boat is built, calked and pitched, oars and poles made, and the journey resumed. Going down the Lewis River, the Hootalinqua, Big Salmon and Little Salmon Rivers are passed on the right before reaching the Five Fingers. Here four large buttes stand like giant sentinels of stone to dispute your further ingress into the country; the water, in five passages, runs swiftly between; the right-hand passage is the only one which is practicable, and though the water is swift, it is safe if the boat be kept in the center.

A few moments of strong pulling and careful management and the boat is rapidly approaching the Reef Rapids, three miles below. Here again the right-hand side insures safety, and having gone through them the last dangerous water is passed. Next comes the Pelly River, and the



Spring Travel.



Cutting Lumber.



junction of the Pelly and Lewis from the Yukon proper. At this point the first trading post is reached. This is known as Harper's, and is 510 miles distant from Juneau.

Continuing the journey, Stuart River is passed on the right; then the White River on the left, so named on account of its milky-looking water; the next tributary on the same side is Sixty-Mile Creek, so called on account of its being sixty miles above Fort Reliance. A hundred miles below, on the left side, is Forty-Mile Creek, forty miles below is Fort Reliance. Here the Yukon is over two miles in width, and on the upper bank of Forty-Mile Creek is the principal trading post of the interior. This is the starting point for all the mines, and is 750 miles from Dyea.

An outfit weighs, as we have said, some 1,800 pounds; to move this in winter is almost impossible. The snow is dry and frosty, and a sleigh pulls very hard over it. The best a man could hope to do would be to haul 200 pounds, and with this he could make about fifteen miles a day. Say he starts from a given point, takes 200 pounds of his freight for seven and a half miles, and then comes back after his other stuff, thus making his round trip for the day fifteen miles; and do not forget that the total distance from Dyea or Skaguay to Dawson City is more than 500 miles.

If a person should have the misfortune to be frozen in, he should go ashore at once, build a small cabin and prospect any small creeks in the vicinity. This, of course, is on the supposition that he is not alone, but is a member of a party of several. A man should bear in mind that, as to the river itself, it never freezes over smooth. The ice forms in great rough masses which render travel impossible. Navigation ceases by October 15.

The following appeared in an Alaskan newspaper: "The miner of Alaska looks to the Yukon country for a reproduction of the scenes of the Cassiar and Cariboo districts. That along that river and its numerous tributaries there are millions of dollars hidden in the sands or locked within the mountain's rock-bound walls, there can be no doubt. For several years the more adventuresome of our placer miners have been going to that Mecca of the North—Forty-Mile Creek. Many of them have returned after one or two seasons' sojourn, none the richer, save in experience; others have struck it rich, and made for themselves snug little fortunes, and a thousand others are wintering there now, hoping that next summer may bring them the good luck, for which they have so long waited.

"Day after day, and season after season, the miners toil cheerfully at the bars and old water-

courses of the creeks and rivers which form part of the Yukon system, and every year sees their numbers increased, and every fall a large quantity of gold finds its way to the mints, and every spring the Alaskan steamers bring several hundreds to join the fortune hunters of the interior, Forty-Mile being the objective point of all going to the Yukon gold fields. Juneau is the outfitting point, the head of regular steamboat navigation during the winter and spring months. Here all persons leave the steamers which have brought them from Sound ports, or Victoria. The town is well supplied with hotels and restaurants, where good board can be had for a dollar a day, lodgings extra. Here outfits are purchased for the journey in, and they must be selected and put up with care, for more than 700 miles stretch of weary length between Juneau and Forty-Mile.

“The market here offers everything necessary of good quality and at reasonable prices. The merchants understand the trade, and will select and put up an outfit, large or small. Unless a man knows what he wants the best thing he can do is to name the price he can afford to pay, and leave the selection to the merchant. The cost depends upon the purse of the buyer, and while a few have started in with as small as \$25 outfits, \$100 would be a far safer figure, and very many greatly exceed this.

"Among the principal things is a Yukon sleigh, which is made here from a model which has proved to be the best fitted for the work required; an ax, saw and nails for building a boat; warm and serviceable clothing, including gum boots, blankets and provisions for five months at least.

"The valley of the Yukon may be reached from Juneau by four different routes, crossing the coast range of mountains by as many passes—the Dyea or Chilkoot Pass, the Chilkat, Moore's or the White Pass, and Takou. As the Chilkoot is the only pass used to any extent, it is this route the miner will select. [Since this was written White Pass has been much improved—Ed.]. From Juneau to the summit of the Chilkoot Pass is a distance of 115 miles. Small steamers ply irregularly between here and Dyea, the head of navigation, 100 miles northwest of Juneau. During the early spring these boats usually sail a day or two after the arrival of the mail steamers from the Sound. The trip in good weather is made in twelve hours if there is no towing to be done, and the regular fare is \$10, each passenger furnishing his own blankets and provisions.

"If the party is a large one with considerable baggage a scow is loaded with the miners' outfits; if the tides are high the boat sometimes goes

over the bar at the head of Douglas Island, thus saving nearly twenty miles of travel, besides avoiding the rough waters of the Takou. If the tides are not high the scow may be towed over the bar by the little tug Julia, and the steamboat will take its course around the lower end of Douglas."

Thomas Martin, of Jermyn, Lackawanna County, Pennsylvania, writes of the trip in by way of Dyea:

"I arrived here, Klondike, May 18, this morning about 10 o'clock, and have been busy all day getting things from the boat, and putting out cash and grub up in trees out of the way of the dogs. I wrote my last from Pleasant Camp. From there the hard work began. To Sheep Camp—one camp from Pleasant Camp—it was mostly uphill. It was hard work for a man to pull a hundred pounds of flour or anything else up some of the hills. It took us about five or six days to get our outfit to the foot of the summit. Then we had it packed over when a terrible storm was raging. But there was no turning back. So we loaded half of it on our sleds and started for Lake Lindermann, about fifteen miles. We reached there all right, and the following morning started back for the summit again for our other load, which we had to bring through a canyon about a mile long. Next morning we started down Lake Lindermann with set sail. We could hardly see, but we had plenty of wind in our favor. It made us hustle and we

soon got across to camp. The following day we pulled our load to Lake Bennett, and next morning started at 3 o'clock to cross the lake. We did not get very far before we struck a quarter of a mile of soft ice. Here we had some hard work, but we helped others and they helped us. We traveled about twenty miles that day, and next day reached the foot of Lake Bennett. Here we had a terrible gale of wind. I had to pull down the sail and row. We made two trips across Caribou Crossing next day, and camped on Taka Lake. We had fair traveling then till we camped on Marsh Lake to build our boat. At Caribou we had been joined by three other men, and we decided to build a boat together. But then the trouble began. If Noah had as much trouble in proportion to build his ark as we had to build our boat, I should feel sorry for him. But we got there, and when we started it was with a boat twenty-three feet long, and five feet wide in the middle. It was built to carry six men and our outfit of 3,500 pounds. We pulled it to the water's edge—about fifteen miles—calked and pitched it, and started down the river. Our steersman was a sailor from the steamer Mexico. Everything went all right until about 5 o'clock, when we saw a red flag and a black one ahead. We kept going and ran square on top of a rock in the middle of the current. The boat would not move, and on each side were about 100 feet of swift, deep, water. We thought the boat might go to pieces and drown us all, but she stood it well. After awhile a man who heard us shout came up and asked us if we wanted help. He brought seven

other men and we unloaded our boat so that it floated off all right.

"We were then within a short distance of the canyon. We went through that and the White Horse Rapids all right, and had good luck after. The Lewis River was jammed with ice so we had to camp.

"We reached Lake La Barge and next day started down through the soft ice, following the other boats. Men in each boat were cutting the ice and keeping it back from smashing things. The bow of one boat touched the stern of the other, so that the ice could not get between. When we reached solid ice we got the boats out of the water on the sleds and started off. We went about a mile and struck a current running across our route. We had to get the boats across this, then take them out of the water again on the other side. When we were reaching the foot of Lake La Barge the ice was getting pretty thin, and at last the stern of our boat went through. We had to unload pretty lively and pull her ahead. We put a pole down, but found no bottom.

"This was nothing compared with our experience on the river below Lake La Barge. I never knew much about riding a boat, but in this case it was row or swim for about forty miles. It was the worst river I ever saw. It was full of rocks and twice we scraped our boat. We ran the Hootalina Rapids next. The river was low and that made it worse. We had to stop day after day for the ice to go down ahead of us. We passed the Five Fingers Rapids in safety, and also the Rink Rapids. After that we went all

right and landed here at Klondike, which, if the men are telling the truth, is the richest creek in the world.

"I have been away to the diggings two days and now I am tired with tramping. It was raining when we started for the diggings with a pack apiece on a trail on which we could walk about a mile an hour. We had to cross the Klondike in a boat; fare, \$1 each. A little further we reached another river too high to ford. We felled a tree and floated over on that. Then we struck the Overland, which is in some parts water to your knees, or even over head. We made the acquaintance of some men on the trail, and they advised us to go back. I said 'No,' having got so far we were going all the way. By and by we reached a new cabin not yet occupied. We stayed here and cooked supper. After supper we kept on till 9 o'clock, then stayed all night with three other men in one of the cabins. Next morning we started to find some of Dick Rosemorey's old friends who had come in early. We kept finding them right along. They had rich claims, but these were winter diggings. We kept pushing on, and in the afternoon reached Frank Belcher's claim on El Dorado. It is very rich, one of the best. We stayed there all night. Frank told us not to be in any hurry, as we could get all the work we wanted in a little while. Next morning the first man we asked gave us work on summer diggings as soon as we can get back to Dawson Pond and get another pack, which takes two days. The wages are all right.

"There is a sawmill here and lots of places

for selling whisky—fifty cents a drink. One man is bringing 200 barrels. He will have no trouble to sell it. I have not seen any big game myself, but there has been lots of moose meat brought into camp. They said that men were starving in this country, but it is not.”

Joaquin Miller has written to the *San Francisco Examiner* that the hardships of the trip have been much exaggerated. He said:

“Now, I am not going to take the responsibility of advising any one to come on this year. But of two things I am certain, from what I have found out since coming to the Sound. First, there is no possible chance for a famine in the mines; and second, the dangers and hardships and cost of getting there have been greatly exaggerated. This is no new thing in the gold discoveries, and is only a bit of human nature. You see, the discoverers and those who come in early want to hold and keep all in sight till they can get their friends in. I am not going to say anything unkind of the dauntless men in the Klondike. I only know the men who discovered the Salmon River mines in Idaho sent out runners and posted notices to keep people from rushing in. And we used the very same arguments—starvation and intolerable hardships. But nobody starved, and, while a few perished in the snow, it must be remembered that men die from indigestion as well as from hunger. In line with this truth, I give the following from a responsible friend’s letter, written lately from Dawson:

“ ‘The hardships of the trip are much exaggerated and misunderstood by the outside world. Of course, on the trails from Dyce to Lake Lindermann, a man’s patience, nerve and strength are taxed to the utmost. Just from the ship, stores, offices and homes of luxury, or at least comfort, many find their strength almost unequal to the occasion; some have been seen sitting on their burdens, weeping, swearing, or in silent despair.

“ ‘There is no sickness to speak of, and few accidents on the trail. Everybody is well and glad they are here. The mines are probably the richest, and cover a larger field than any ever discovered before. The gold is coarse, nuggets going as high as \$300. Dirt washed out goes as high as \$800 to the pan, one man offering to wager he could pick and wash out \$1,000 to the pan. Of course, this is an exception. El Dorado Creek so far has shown the richest. All through Bonanza shows very high. Hundreds of miles of unexplored country are ready for the prospector. The country is governed by a gold commissioner, and captain of the mounted police. They are courteous and adopt a liberal policy. The Episcopal and Catholic churches are establishing missions here. New enterprises are springing up every day. The saloons predominate. Among the many questions asked of those going to the Klondike is the one of the distances. By way of St. Michael and up the Yukon, it is 4,996 miles from San Francisco. To Klondike by way of Juneau it is little more than half the distance, or 2,694 miles. From Juneau to Klondike it is 678 miles.’ ”

Any one proposing leaving New York City for the Klondike should study this table:

Fare to Seattle over the Northern Pacific.....	\$67.75
Tourist sleeper, fare.....	\$9.00
Pullman sleeper.....	\$18.00
Meals in dining car.....	\$18.00
Tourist meals at stations.....	\$9.00
New York to Seattle, in miles.....	3,160
Number of days en route.....	7
Steamer fare, Seattle to Juneau, with cabin and meals.....	\$75.00
Fare, with berth.....	\$67.50
Miles, Seattle to Juneau.....	1,000
Number of days, Seattle to Juneau.....	3
Cost of living in Juneau, per day.....	\$2.00
Steamboat, up Lynn Canal to Healey's Store, miles.....	100
Number of days to Healey's Store.....	1
Cost of complete outfit, with provisions for one year.....	\$600.00
Price of dog and sled outfit.....	\$500.00
Total distance in miles.....	5,000
Total days required for journey.....	90
Best time to start.....	April 15

While Dyea is spoken of as the point for which most boats are heading, the majority of the passengers will get off at Skagawa, a few miles from Dyea up another inlet. The pass from Skagawa, called White Pass, is now considered better than the Chilkoot, back of Dyea. White Pass is lower, much work has been done

on the trail and there is wood all along the route, while on the Chilkoot Pass route wood has to be carried, if packers desire a fire during the night necessarily spent on the trail.

Mr. C. H. Wilkinson, Canadian representative of the British Yukon Company, confirms the report that the White Pass pack trail over the mountains was opened for travel on July 16. It is a little east of the Chilkoot Pass route. Not only was White Pass opened for pack travel, he said, but the company had completed arrangements for placing a fleet of between ten and twenty steamboats on the Yukon River as soon as the river opens next spring. The boats have already been contracted for, and will be in readiness for the opening of navigation. These boats will be flat-bottomed, with stern-wheels, very much of the same style as the old Mississippi and Ohio River craft. They will be built to draw, when empty, only some eight inches of water, and when loaded about twenty inches. The lakes along the Yukon are quite deep, but the river is in places very shallow, necessitating the light draught lines on which the boats are being built. Half of this fleet will ply between the point where the trail over the White Pass strikes the headwaters of the Yukon and Miles Canyon, in the heart of the Klondike district. This distance is 650 miles. The other half of the

fleet will ply on the lower Yukon, between Miles Canyon, and the mouth of the river. Communication will thus be established by the two principal routes by which the gold fields are reached by way of the White Pass, and by way of the lower Yukon.

Mr. Wilkinson says that it is now altogether probable that the British Yukon Company will begin the construction of a narrow-gauge railroad over the White Pass as early next spring as operations can be begun. It was at first the intention of the company to build only a wagon road next summer, to be followed by a railroad if a subsidy could be obtained from the Dominion Government. In view, however, of the great rush to the gold fields the British Yukon Company had practically decided to build the railroad at once.

The *Alaska Searchlight* published a letter from William Moore, at Fourteen-Mile Creek, Skagawa, Alaska, stating that the White Pass pack trail to the summit of the pass was opened for travel July 16. On reaching the summit the traveler steps upon an almost level country, the grade to the lakes being 20 feet to the mile. The distance from Saltwater to the Tagish Lake is 30 miles, and from Saltwater to the head of Lake Bennett, 45 miles. Both routes from the summit are through rolling country, for the most part open,

with plenty of grass for feeding stock, water and sufficient timber for all purposes. From Salt-water to the summit stock and pack horses can be driven through easily.

Mr. Escoline, of the British Yukon Company, has telegraph from Victoria that he has just returned from a trip through the White Pass into the Yukon country, and that it only took him two days to make the journey to Tagish Lake. Mr. Escoline represents the pass as easy, and says that horses go right through without any difficulty, and find ample forage on the way.

It is not known whether one can buy lumber for boat building at the head of Lake Bennett or not, but it is assumed that the rush has exhausted the supply, and the late comers unprovided with boats would have to saw their own lumber. The Skagawa, or White Pass, is now being opened for horses, nearly all the people are turning that way. Lake Lindermann, Lake Bennett or Lake Tagish may be reached by this route, at from twenty-four to thirty-one miles. As many as 400 horses are either on the way to Skagawa or will be started within a week. This number will relieve the accumulation of freight at both passes. Packers who are taking horses will be able to earn the entire cost of their animals in ten days. One man who shipped thirty horses had eight or ten tons of

freight contracted at fifteen cents a pound. It is assumed, however, that the packers' harvest will not be of long duration. With the coming of snow, which will permit of using sleds most of the distance across the pass, prices should go down to two or three cents a pound. But this condition of things can hardly come about until the river shall be frozen and the season be too late to reach the Yukon before spring.

John C. Calbreath, an old-time resident at Telegraph Creek on the Stickeen River, British Columbia, has been directed by the Canadian authorities to secure a route that will be available for ordinary traffic from the head of Stickeen River to Teslin Lake. This body of water, it may be mentioned, is the source of the Hootalinqua River, a tributary of the Lewis, branch of the Yukon. If the road is perfected as now contemplated it will materially shorten the distance that must be traveled by prospectors in order to reach the Yukon country, and, in addition to this, will enable them to avoid all mountainous trails which are encountered in the journey by way of Juneau.

At present there is a trail from the mouth of Telegraph Creek to the lake, but it is difficult and not by any means in a straight line. It goes westward up the Tahtan River, and then across the divide into the valley of one of the

lower branches of the Taku, and then over another divide into the Teslin Basin.

Calbreath prospected the entire country last season, and ascertained from the natives that a little further westward of Telegraph Creek was a higher bench of open, level, country extending almost to the lake. The ascent from the south is comparatively easy, and, in fact, the only difficult portion of the proposed route is immediately south of the lake, where there are two or three miles of marshy ground.

Steamboat operation is possible on the Stickeen River during at least five months of the year, while vessels drawing from three to three and a half feet may run up to within a few miles of the headwaters of the stream. A Victoria paper says of the proposed route:

"A. E. Mills, who was one of the party with J. C. Calbreath building the trail from Telegraph Creek to Teslin Lake, is back in Victoria. This trail is the one to which the government gave a grant of \$2,000 to assist in building. The party left Telegraph Creek on May 26 and got the trail through to the lake on June 28. The intention had been to cross the plateau to the east and build the trail by that line, as more direct, but there too much snow was encountered, and so the party took the old Hudson's Bay Company's trail, which runs sixty miles,

working along it, and then finished to the lake, the distance being some 150 miles. The route was found on the whole level, with clumps of scrubby woods, or some swamp lands to encounter in places, but is pronounced by Mr. Mills to be a very good trail and a very feasible way into the Yukon. At the lake a large scow had been built by men in Calbreath's employ, and some supplies were shipped on it to Klondike before the party started on the return. It took the party nine days to get back to Telegraph Creek, though they could have made it in a day less if they had wished. Sixteen miners went on to Klondike on the scow.

"Mr. St. Cyr, the surveyor sent out by the Dominion Government to examine the various routes into the Yukon, was met two days' journey from the lake as the Calbreath party came back. He had followed their trail in, so he will be in a position to report upon it, and he will come back by some other route. By this time there is now a very good road into the Yukon if steamers would connect at Teslin Lake. Bonding goods at Wrangel, they can be taken by steamer up the Stickeen to Glenora, where the bond can be lifted. Then at Telegraph Creek, ten miles further on, goods can be taken over the 150 miles of trail to Teslin Lake, and from there it is all plain sailing by water to Klondike.

This route would only be some ten or twelve days' travel from Wrangel. All along the trail the feed for cattle is excellent."

The yearly report of the British Columbia Board of Trade, which has just been issued for 1897, has the following encouraging remarks in regard to the mining possibilities of Cassiar, and to the prospects of the Cassiar Central Railroad in connection therewith. Speaking first of the possibilities of the district, the report says:

"Immediately north of Caribon is the district of Cassiar, an immense country, very little prospected. Several of the waterways have afforded richer placer diggings.

"It is hardly within the scope of this report to do more than mention the Yukon gold fields which lie north of Cassiar in the Northwest Territory of Canada. The latest excitement resulted from discoveries on the Klondike River and tributaries. Some of these are reported by old miners to equal California in early days in richness. It is believed that this mineral belt extends to Cassiar, and that the whole of the divide will be found to be rich in gold."

Then as to the railroad and its proposed connections the Board of Trade speaks as follows:

"It is a matter for congratulation to find British capitalists interesting themselves in transportation enterprise in this province, as it affords

some assurance that the accounts of the great natural resources of British Columbia are gaining credit in established centers of finance. The charter of the Cassiar Central Railway has been acquired by such persons. Although the railway in this case will be short, probably not more than seventy-five miles, an immense area will be tributary to it. Fort Wrangel, which is open to deep-sea vessels, will, in the meantime, be the western starting point; from thence passengers and freight will be taken on the company's steamers to Telegraph Creek, Stickeen River, where the railway will begin. The first eastern terminus will be at Dease Lake.

"It is proposed that the company's steamers run on this lake and on the Liard and Frances Rivers, tributaries to the Mackenzie River, which flows into the Arctic Ocean. A few portages only will be necessary to control navigable waters extending over at least 1,000 miles. It is expected that preliminary surveys will be made immediately, and that the railway will be completed before the close of 1899."

Moran Bros., proprietors of a shipbuilding plant and machine-shop at Seattle, closed a contract with a British Columbia syndicate lately to build three boats for the Stickeen River. These boats are for a new route to the Yukon which the Canadians are exploiting. The

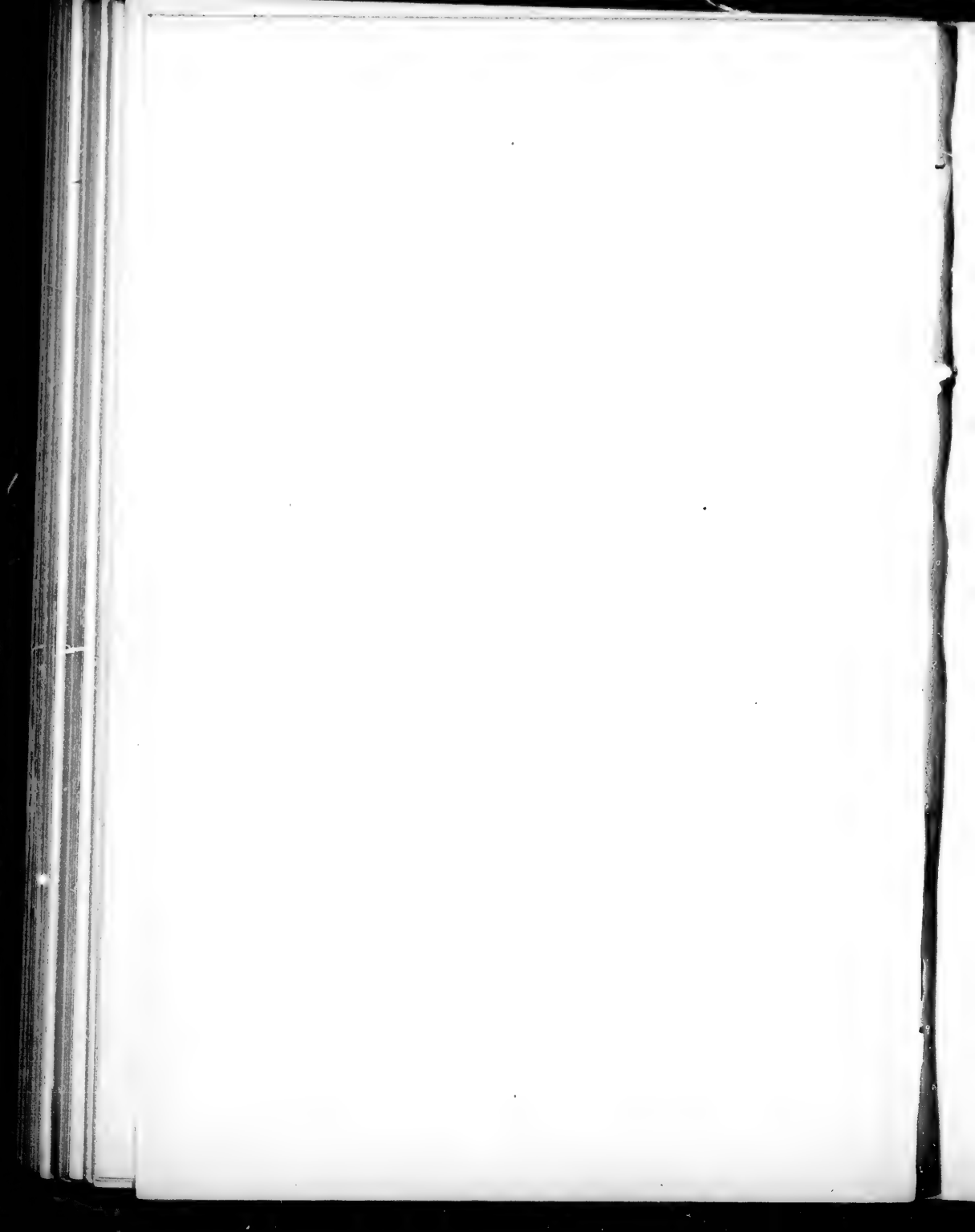
Stickeen River heads in the Cassiar mining district. From the head of navigation on the Stickeen there is now a trail into Dease Lake, at one time a famous mining camp, to which twenty years ago there was a rush similar to that on at present to Klondike.

From Dease Creek the Canadian Government is building a trail to the Yukon. When completed this will be the Canadian route to the mines, although the Stickeen's mouth is in Alaska. One of these boats will be a stern-wheeler 190 feet long, with a beam of 20 feet; another will be a stern-wheeler 120 feet long, and the third a barge of about 500 tons' capacity. The Morans are to get out all the material here and have it ready to put together, and build the engines and boilers as well. Then the material will be taken to the Stickeen, and the boats built and launched there.

M. J. Heney, who returned to Seattle on the City of Topeka, has stated that a new route to the Klondike has been surveyed and partially constructed by the Canadian government. Pack trains are already running over it. The route is by the regular passenger steamers to Fort Wrangel, from which place the Hudson Bay steamer is taken to the head of navigation on the Stickeen River. From this point the government has cut the trail to a point on the



Five Finger Rapids.—Page 105.



Yukon River, below the rapids. The route is said to be popular with many.

Great interest is felt in new routes to the Yukon gold fields, which will reduce the time and cost of the journey. A man who establishes pack trains over any of the new routes will make more money than most of the new Klondike miners. The best trail from the coast to the Yukon region is said to be by the Lake Teslin trail. It starts at Fort Wrangel and presents few difficulties. This route leads up Telegraph Creek from Fort Wrangel, and is clear water travel for about 100 miles up the creek. The creek is abandoned there and the traveler strikes straight across the smooth tableland for about 175 miles. Then Teslin Lake is reached, and it is plain sailing down the Hootalinqua River, a tributary of the Lewis River, and down the Lewis it is clear going to Dawson City.

The only dangerous part of this route is the Five Fingers Rapids, and these are not bad if one has a guide. Even now, it is said, the trip to the gold fields can be made with less danger and more quickly by this route than by any other. It is open usually until the middle of October, and sometimes as late as November.

The chief astronomer of the Dominion Bureau of Surveys and International Boundary Commission has said in an interview that in his opin-

ion the route to the Klondike gold fields by way of the Mackenzie River, Fort McPherson, and Peel River, to Fort Yukon in Alaska, was utterly impracticable, if not impossible in the fall.

Starting from Edmonton, the end of railway communication, the commissioner said, the way traversed would be upward of 3,000 miles over land, river, and lake, to the Klondike. The water route included many difficult portages. The Hudson Bay Company's steamers ply the Mackenzie at uncertain dates, from point to point. No means of conveyance on other portions of the journey are to be found, and travelers would have to canoe and portage vast distances under great difficulties, subject to long delays, carrying their own means of locomotion and necessities of life.

Under favorable circumstances the time consumed, exclusive of unavoidable delays in making the journey, would be upward of two months. The Mackenzie River will be open until about the middle of October, but by the time the Yukon could now be reached it would be closed to navigation, and traveling overland for 500 miles from Fort Yukon to the Klondike would be almost impossible.

This belief is, however, not shared by the citizens of Fort Saskatchewan, who have met and passed the following resolutions:

"That, in our opinion, and for the interest of the whole Dominion, the Federal authorities should immediately construct a wagon road and telegraph line from this point to the Upper Yukon, via Fort Assiniboine, the Lesser Slave Lake, the Peace and Liard River Valleys, where an almost air line can be got, per Dr. Dawson's report of 1888, and tap the mineral belt of the West and North at a nominal cost, the total distance from here to Klondike in a straight line being only 1,100 miles, while the nearest now used is about 3,400 miles. Our proposed route has 250 miles of wagon road now almost ready for use, another 250 miles is reported to be through prairie and bluff, and it is supposed that between 600 and 700 miles could be completed between now the first of December next. We would respectfully recommend that Mr. McConnell have charge of the survey, as he has had experience on part of route during the geological survey, and thus save a lot of valuable time. The resolution is respectfully submitted." Mr. F. Fraser Tims is chairman of the committee.

There is a new route to the Klondike. Let the voyager buy his canoe at Winnipeg, on the Red River of the North, float it down stream (north) to Lake Winnipeg, then cross Lake Winnipeg to the mouth of Saskatchewan River, then

follow that river up stream to the forks, where the North Branch empties its waters into the Saskatchewan. Follow from there the North Branch up stream to White Whale Lake. Here is the first transfer overland, ten miles westward to Pembina River. Then float down stream on the Pembina River to the Athabasca, thence down stream to Lake Athabasca, crossing it and taking the Slave River down stream. Crossing the Great Slave Lake, take the Mackenzie River northward (down stream) until the mouth of the Liard or Mountain River is reached. Follow the Liard or Mountain River up stream to Simpson Lake, where the second and last transfer by land occurs, fifty miles northward to Francis Lake, which is the headwaters of the Pelly River. Float down this Pelly River to the Yukon, thence down the Yukon, prospecting as you go, until your El Dorado is reached.

This country, until Great Slave Lake is reached, is filled with all sorts of game. It will take no longer to go this route than it will to go by vessel from Seattle to St. Michael, at the mouth of the Yukon, and thence 1,800 miles up the Yukon.

A Caribou mining man claims he has found a road into the Klondike country, which starts from that ancient and renowned placer ground. This route starts from the upper end of Stuart

Lake, about 500 miles above Ashcroft, B. C. For sixteen miles above Ashcroft there is an excellent wagon road, which brings the traveler to Upper Fraser River, which is navigable for 350 miles for light steamers.

Miners provided with pack horses need not bother with rivers and lakes, as the distance to the fort can be traveled with ease by pack train. No feed need be carried for horses, as there is an abundance of grass the entire distance.

From Fort Connelly the route would be to Telegraph Creek, over prairie country. From Telegraph Creek to Klondike travel is easy. The entire route is said to present many preferable features to the water route via the coast and through the lakes to the Yukon River.

This route takes the traveler through what will probably prove one of the greatest mineral producing countries in the world. Many rich creeks will undoubtedly be found, which will make it unnecessary for prospectors to go further north, and will make room for thousands who will be crowded out of the Klondike region. The new overland route places the Klondike country within 1,300 miles of Seattle and within 1,000 miles of railroad communication.

One adventurous Norwegian, N. Anderson, of Rossland, B. C., purposes piloting a party of his countrymen into the Klondike country. He will

go to Norway and there organize the party, selecting only those who are strong, hardy and used to skis or Norwegian snowshoes. His idea is to strike off from the Fraser River and shape a course for the headwaters of the Mackenzie River, and follow that stream far enough north and then make for the headwaters of the Yukon, and follow that stream down. The upper portions of the Yukon and its confluents there have never been prospected by white men, and he feels certain that during the trip rich placers will be found.

"All roads lead to Rome," and there are many ways of reaching the auriferous region of the Upper Yukon. One of them is thus described by a writer in *The Hamilton Spectator* :

"Canadians should awaken to the fact that they have emphatically 'the inside track' to their own gold fields—a route not half the distance, largely covered by railways and steamboats, with supply stations at convenient intervals all the way. By this route the gold fields can be reached in two months or six weeks, and the cost of travel is ridiculously cheap—nearly anybody can afford to go even now, and by spring it should be fitted out for the accommodation of any amount of traffic. For the details of the information the *Spectator* is indebted to A. H. Heming, of this city, the artist who accom-

panied Mr. Whitney in his journey toward the barren lands, and the data may be accepted as correct, as they were secured from the Hudson Bay officials.

"The details of the inland Canadian route, briefly, are as follows: By Canadian Pacific railway to Calgary, and thence north by rail to Edmonton; from there by stage to Athabasca Landing, forty miles; then there is a continuous waterway for canoe travel to Fort McPherson, at the mouth of the Mackenzie River, from which point the Peel River lies southward to the gold region. The exact figures are as follows:

"Edmonton to Athabasca Landing, 40; to Fort McMurray, 240; Fort Chippewyan, 185; Smith Landing, 102; Fort Smith, 16; Fort Resolution, 194; Fort Providence, 163; Fort Simpson, 161; Fort Wrigley, 136; Fort Norman, 184; Fort Good Hope, 174; Fort McPherson, 282. Total, 1,882.

"There are only two portages on this route of any size—that from Edmonton to Athabasca Landing, over which there is a stage and wagon line, and at Smith's Landing, sixteen miles, over which the Hudson Bay Company has a tramway. There are four or five other portages of a few hundred yards, but with these exceptions there is a fine 'down-grade' water route all the way. It is the old Hudson Bay trunk line to the north

that has been in use for nearly a century. Wherever there is a lake or long stretch of deep-water river navigation, the company has small freight steamers which ply back and forward during the summer between the portage points or shallows. With comparatively little expenditure the company, or the government, can improve the facilities along the line so that any amount of freight, or any number of passengers, can be taken into the gold region at less than the time and cost that it takes Americans to reach it from Port St. Michael, at the mouth of the Yukon, to the Klondike, exclusive of the steamer trip of 2,500 miles from Seattle to Port St. Michael.

"Canadians can leave here on a Monday at 11:15 A.M. and reach Edmonton on Friday at 7 P.M. From that point a party of three men with a canoe should reach Fort McPherson easily in from fifty to sixty days, provided they are able-bodied young fellows with experience in that sort of travel. They will need to take canoes from here, unless they propose to hire Indians with large birch-bark canoes to carry them. Birch-bark canoes can be secured of any size up to the big ones manned by ten Indians that carry three tons. But birch barks are not reliable unless Indians are taken along to doctor them and keep them from getting water-logged. The Hudson Bay Company will also contract to take

freight northward on the steamers until the close of navigation. Travelers to the gold mines leaving now would probably reach Fort McPherson before navigation closed.

"Any Canadians who are anxious to get into the Klondike ahead of the Americans can leave between now and August 1, reach Fort McPherson, and if winter comes on they can exchange their canoes for dog trains, and reach the Klondike without half the difficulty that would be experienced on the Alaska route. The great advantage of the inland route is that it is an organized line of communication. Travelers need not carry any more food than will take them from one Hudson Bay post to the next, and there is abundance of fish and wild fowl *en route*. They can also be in touch with such civilization as prevails up there, can always get assistance at the posts, and will have some place to stay should they fall sick or meet with an accident. If they are lucky enough to make their pile in the Klondike, they can come back by the dog sled route during the winter. (There is one winter mail to Fort McPherson in winter). Dogs for teams can be purchased at nearly any of the line of Hudson Bay posts, that form a chain of road-houses on the trip. Parties traveling alone will not need to employ guides until they get near Fort McPherson, and from there on to

Klondike, as the rest of the route from Edmonton is so well defined, having been traveled for years, that no guides are required.

"You don't need a couple of thousand dollars to start for Klondike to-morrow by the Edmonton route. All you need is a good constitution; some experience in boating and camping, and about \$150. Suppose a party of three decide to start. First, they will need to purchase a canoe, about \$35 or less; first-class ticket from Hamilton to Edmonton, \$70.40; second-class, ditto, \$40.90; cost of food at Edmonton for three men for two months (should consist of pork, flour, tea and baking powder), \$35; freight on canoe to Fort McPherson, \$23. Total for three men from Hamilton to Fort McPherson, provided they travel second-class on the Canadian Pacific Railway (they can travel in a Pullman coming back), will be \$218.70. These figures are furnished by Mr. Heming, who has been over the route 400 miles north of Edmonton, and got the rest of his data from the Hudson Bay officials.

"If three men chip in \$150 each they would have a margin of over \$200 for purchasing their tools, and for transport from Fort McPherson to the Klondike. This is how it may be done cheap, though Mr. Heming considers it ample for any party starting this summer. Prices will likely rise on the route when the rush begins.

If the Hudson Bay people are alive to their interests they will forward a large amount of supplies for Fort McPherson immediately, and make it the base of supplies for the Klondike during the coming winter. Parties should consist of three men each, as that is the crew of a canoe. It will take 600 pounds of food to carry three men over the route. Passengers on the Canadian Pacific Railway are entitled to carry 100 pounds of baggage. The paddling is all down stream except when you turn south up Peel River, and sails should be taken, as there is often a favorable wind for days."

The trip from Fort McPherson to Klondike, by this route is the uncertain quantity. The watershed between the Peel River and the headwaters of the Stuart and Beaver Rivers—down one of which the descent to the Yukon could be made—is said to consist of comparatively low mountains, easy to cross. Mr. Ogilvie, the official surveyor of the Canadian Government in the Yukon country, states that a prospector crossed the range from the headwaters of the Beaver to the Peel, and found only low, gravelly hills in the way. In cold weather this route would probably be nearly as impractical as the other routes.

One expedition, composed of three men with supplies for two years, has been prepared by Messrs. R. H. Pope, M. P., A. L. White and

others, and it will follow the route. This little party will go by Edmonton, Athabasca Landing, and the Mackenzie River.

The prospect of the opening of an all-Canadian route to the Yukon has already brought forward claims from more than one Western city to the privilege of being the terminus of such a route. The Winnipeg *Daily Nor'wester* of July 30 contains an article of considerable length, dealing with the part to be played by the Red River in the establishment of a water route to the gold fields. It calls for the pushing on of the construction of locks at the St. Andrew's Rapids. It says: "But for the obstructions at St. Andrew's, there would be uninterrupted steamboat navigation between Winnipeg and the Saskatchewan via the Red River and Lake Winnipeg. With the exception of the Grand Rapids, round which there is a tramway portage of some three miles, the Saskatchewan River is navigable for steamboats from Lake Winnipeg to Edmonton. At Edmonton a wagon road of ninety miles connects the Saskatchewan with the Athabasca, and this wagon road will soon be superseded by a railway, for the Canadian Pacific Railway Company has now announced its intention of extending its Calgary and Edmonton branch to Athabasca Landing. There is thence continuous navigation by steamer and flatboat

along the Athabasca Lake and Slave River to near Fort Smith, where there is an obstruction of a few miles, round which, however, there is a good wagon road. From Fort Smith there is continuous steamboat navigation to the Arctic Ocean, via the Great Slave Lake and the Mackenzie River. There are a number of tributaries to the Mackenzie River, whose headwaters almost interlock with the headwaters of streams flowing westerly into the Yukon River. One of the most important of these is the Liard River, whose headwaters nearly meet the headwaters of the Pelly River, the most important branch of the Yukon in British territory. The Liard River is susceptible of steam navigation from its confluence with the Mackenzie to Fort Liard. Mr. McConnell, D.L.S., has navigated it by canoe between Fort Liard and the confluence of the Dease River, and it is doubtless similarly navigable still further up. The Peel River, another affluent of the Mackenzie, has its headwaters very near the headwaters of the Macmillan River, which flows into the Pelly or Yukon River at Fort Selkirk. Tributaries to the Peel River also interlock with the headwaters of the Porcupine River, which joins the Yukon River at Fort Yukon. The Peel River is capable of steamboat navigation for over half its length, and is doubtless susceptible of flatboat navigation almost its entire length.

Writing from Fort Saskatchewan to the Calgary *Herald*, under date of July 26, Mr. F. Fraser Tims makes the assertion that "Calgary should be the jumping-off place for the whole of the Yukon country, either for the upper or lower portion." He proceeds as follows:

"For the Lower Yukon all that has to be done is to start either from Athabasca Landing or Peace River Landing (preferably the latter, as there would only be one portage instead of more on the other route), and drop down stream all the way to the Mackenzie River, to Peel River (one of its western branches), and cross the divide about fifty miles, and then you find the Porcupine River, which is one of the principal rivers flowing into the Yukon, and used to be the Hudson Bay Company's way of getting to Fort Yukon prior to the United States taking possession of that portion of Alaska. In addition to it there may be several other feasible routes not so far north.

"To reach the Upper Yukon country the route should be via the ruins of Fort Assiniboine, Lesser Slave Lake and Peace River Landing. There is an old cart trail from Edmonton to Lesser Slave Lake, which has not been used for years, but which could be put in shape for wagons at a nominal cost, and from the lake to Peace River Landing, a distance of about seventy

miles, there is now in operation a good wagon road. From Peace River Landing to the Liard River it is a country similar to that of Edmonton district, namely, prairie and bush.

“A wagon road, in addition to the water route of the Liard, can be got by following up the valley of the Liard, or striking across country to Lake Francis, and this brings you to the upper part of the Yukon and close to where the big finds have been made. The total distance from Edmonton to the Upper Yukon would thus be about 850 miles.

LIFE AT THE DIGGINGS.

NOTHING so vividly portrays life in a new region as letters from those that are struggling for a living there, and in accordance with this belief a collection of those most worthy of credit is here gathered together. They show what life really is in these new diggings on the edge of the Arctic circle.

A former Seattle man writes:

"KLONDIKE, Alaska, June 15, 1897.

"I got your letter all right, and will answer. We are here in safety and are glad we came, as I think we are strictly 'in it.' The mines are very rich and new strikes are being made all the time, but we may not get anything very big. We made a fine trip and are doing fairly well. Wages are \$15 a day now and may keep at \$1 to \$1.50 per hour all winter, but some think they will come down to \$1 per hour. I like the country very well, but there is lots of hard work. Getting here our trip cost us two \$336, or \$168 each, and three months' work to get in and settled. Have two claims each staked; Henry has earned nearly \$400 at \$15 a day, while I am on a lay representing a half interest in the claim. Don't

know if there is anything in it or not. He is making our grubstake for the winter, while I am fishing for a good strike of our own.

"I am well and like this country, but it is a queer place. Just think of having to go to bed in broad daylight, for the daylight is twenty-four hours long here now. We will have our night next winter. It comes then in chunks and nearly forgets to go away. We have four or five months' grub, all but the flour, and that is \$6 a sack, and that is low when a man can get \$15 a day. I have not earned a dollar yet. Henry will soon have \$450 earned for our grub next winter. We are in Cahoots yet. I wrote home to-day. The man that takes this out had \$40,000 out of his dump this spring, and only dug a little corner of his claim last winter. Hundreds are like him, and I hope to be some time in the next two years."

One of the most interesting descriptions of a miner's life in the far North is contained in a letter written by Mr. E. S. Dunkle, of Adelphi, Ohio, and he says:

"As I have a chance to send a note out will take advantage of the opportunity. I wintered on the Hootalinqua River, the first white that ever put in a winter there; the other boys did not get their grub over the mountain. They came over this spring. I had a great experience killing lynxes and wolverines.

"The boys brought me the news of this great gold strike here on the Klondike River. The like has never been known. Some claims clean up \$1,800 a day. Well, when I got the news I

waited till the river broke up, and gave the ice four days the start, then I loaded up my boat and started. I caught the ice the first day. It took me eight days to go eighty miles. Had it been clear of ice I would have made it in one day, but it was one jam after another. I slept one night on a cake of ice.

"When I struck the Lewis River I saw a tent on the opposite side of the river and I steered for it and found four white men. The first thing I asked for was tobacco, as I had not had a smoke since the 20th of March. They told me they were the last to stay over at Lake La Barge, and that there were 100 boats ahead of me. This was 2 o'clock in the afternoon. I talked an hour with them, then got in my boat and started. I had a hard sail and steered from the stern with a sweep and held the sail rope so I could let go at any time. My boat was 22 feet long and 36-inch beam. I had about 1,200 pounds aboard.

"Well, the wind favored me, and as the crowd did not carry any sails on account of the ice, I caught them the second day. I never saw such a rush. They were following the ice too close, and lots of boats were upset and everything lost, but only two were drowned. There were five in one boat that upset, and I picked one of them up and took him the rest of the way with me so that I might have some one to talk to. But I run the Five Fingers and the Pink Rapids myself. I made the 600-mile trip without accident. Old-timers say I made a great trip alone.

"I came in with the push, but when we got here we found everything staked. Forty miles

to Circle City, and everybody rushed in and took everything up. But as soon as the water goes down there will be some rich strikes made on other gulches. I started on May 2, and landed here on the 21st, and have taken in \$330 in fourteen days, but I can't keep it up all summer. I expect to make \$2,000. I have a chance for a 'lay' this winter to 'burn,' and if I get it I will make \$10,000 before spring. If there are any new strikes I will get one of my own. I fooled last summer away, but I am in it now and intend to stay if I keep my health. I have not been sick a day yet.

"Grub is very scarce here until the boats get up the Yukon. Men are going round with from \$10,000 to \$50,000 in their pockets and living on bread and beans. I have plenty of meat, flour, beans, sugar, rice, raisins, apples and peaches, but I keep them all covered up.

"Bacon sold for \$2 per pound and wages are \$15 per day. There are about 1,000 men here. I saw one man come in with 100 pounds of gold. There has not been a single theft here. They would string him up too quick.

Another Argonaut has this to say:

"This is the land of gold. Unless all signs mislead, as signs have already misled, not California in the days of '49, not Australia, nor the prolific 'Rand' in South Africa should rank with it.

"I venture to estimate the output of gold for the season from the placers in the immediate neighborhood of Dawson at \$5,000,000. Some

of the enthusiastic miners here say that the product for the season will be nearer \$10,000,000 than \$5,000,000, but I have noticed a local inclination to brag and I want to be entirely within the facts in any information I send out from this camp of marvels.

"Before this message can reach the coast the story of the richness of these gold-laden placers will be the property of the world, for by that time the miners who left here with their bags of gold will have reached the American cities with their burdens of dust and nuggets to convince the skeptical.

"Dawson has grown like a mushroom since the news of the richness of the mines in this neighborhood reached the other diggings along the Yukon and its tributaries. The present population of this town is about 4,000. Men are streaming in as rapidly as their legs, or the river steamers, or horses will transport them. We in Dawson have a notion that by the close of the short summer season there will be 10,000 people in the town.

"And such a town! It has some of the characteristics of mining camps that Bret Harte has made into story, but it has qualities that California camps never had and never could have. The game of life is played fast, and the boisterous side of mining camps is developing as the population increases. Now Dawson would match Tombstone when Tombstone was young. There are gamblers and dance halls by the score.

"Up to this time we have had no men for breakfast. The police surveillance by the Canadian mounted force, and the sentiment of the

camp sets against violence. But in the new population are many tough-looking fellows, not much disposed to work, and none of us would be surprised to hear the 'petulant pop of the pistol' before Dawson is many days older.

"The principal source of fighting in frontier mining camps, disputes over the possession of claims, has been missing up to this time from the Klondike region. The Canadian mining laws seem fair, and they are regarded and are enforced as well as possible by the small official force representing the Dominion Government. A section in the law prohibits a miner from 'taking up' more than one claim in a neighborhood. This provision of law leads to caution in the selection of claims, and stops land-grabbers from controlling all the claims in sight.

"I do not mean that all the residents of Dawson are willing to obey the law merely because it is law, for I am certain that many of the men are worrying their brains to devise schemes to get hold of a number of claims, and would be glad to evade the rules. Miners generally work in groups, or companies, and each member of a group has an interest in all the claims worked for the joint account of himself and companions.

"But the caution I have mentioned shows itself in the big population of the town. There is no good reason that so many should be here, except this provision of law, restricting a man to one 'location.' When a miner has 'only one rattle out of the box' he takes time before making his throw. Therefore Dawson is a base of operations for men who go out from this center on prospecting trips.

"There are no openings here for newcomers to locate claims along any of the creeks where gold placers are known to exist. All the claims on the 'good ground' in this immediate vicinity have been taken up. A stranger has to get out and prospect in places where nothing definite is known, yet, of course, places just as likely to contain gold as any of the claims that have yielded the big finds to the miners. Parties leave here every day on prospecting tours. When a discovery of gold is reported crowds rush out in frenzy to the place.

"The thronging in of men is making an important change in the prices paid for labor. While provisions are dear, the price of labor is going down. I have known a laborer to get \$20 a day for his toil, but that price was not paid to every man. The indication now is that many men who must have food and clothing will crowd the town, and that the rate of wages will fall to the cost of subsistence. Flour is \$6 a sack.

"The weather is intensely disagreeable. The mercury has stood 87 degrees for two hours in the shade, and this is morning. And there are mosquitoes, millions and millions of mosquitoes—voracious as wharf rats, fiercely stinging. They contribute to the discomforts of living on the Klondike.

"Many prospectors are seeking the quartz ledges, the parents of the supply of gold found in the placers along the banks of the streams. I suppose there must be such ledges, but this country is rough and exploration is perilous. Not many men care to venture further than sixty miles in the unexplored regions.

"Gold in one form or another has been found along a belt nearly 300 miles long. By the close of the season much more will be known of the character of this belt, for the prospecting going on is thorough, the circumstances and population considered, and more definite information should result.

"When I can send a trustworthy report for the guidance of persons contemplating a trip to the Yukon next spring, I shall hurry it down. Just now not much that is definite can be said to persons not on the ground, because of the absence of available openings for stakes in any district known to be worth working."

The following was penned by a Baker City, Oregon, man:

"CIRCLE CITY, Alaska, Feb. 6.

"DEAR MAC: Your letter of September 6, 1896, reached here to-day through the transportation medium of a dog team from Juneau. There are about 600 whites wintering here, including five women. The nativity of the population is about evenly divided between the American, the Canadian and the Tacoma man. The American and Canadian take life as it comes, but the poor Tacomaite seems lost. He wanders around in a dazed sort of way, evidently looking up a terminal site for the Northern Pacific Railroad.

"We had quite a visit from old Boreas last month. He made a stay of ten days with us, and while he frowned we hunted cover. The thermometers all froze up. The last one went

to pieces registering 72 degrees below zero. A bottle of pain killer I possessed, and the only one in camp, was as solid as my views on the financial question. The whisky that was called for in saloons was served on a napkin and doled out in solid four-cornered chunks. As a safeguard against the invasions of the atmosphere from the Pole we are blessed with good warm cabins and plenty of provisions of the following kinds: We have the choicest slabs from the two sides of the fat porkers that were converted into bacon for army purposes during the later American rebellion; we have strawberries in three varieties—the navy, the pink and the brown. We have the evaporated fruit, put up in several different boxes; and you put a few pounds from any box into a pail of water, boil for several hours, then rip up your imagination and sit down to a dish of boiled peaches, pears, prunes, apples or apricots; we have also the steaks that Cudahy & Armour deliver to the hungry public in two-pound cans; we have also the tripe and the ox tongue. We have the one X brand of flour, warranted to be easily distinguished from the white snow. We have the essence of the cow condensed. We have the peelings of the onion put up in round cans and labeled 'Expressly for the Yukon trade.'

"We have the lard from the oil wells of Pennsylvania, and the butter from the stockyards of Chicago. We have the ground coffee put up in original packages without a brand or trademark to identify the owners or manufacturers. The texture of this coffee is very delicate, and when you boil you have no grounds for complaint, or

to throw out. We have a tea—a new discovery that has not yet reached the Eastern epicures; you put a heaping handful in one quart of boiling water and in five minutes you will have brewed a pale green fluid, a small cupful of which will satisfy for many days the hankerings and cravings of the most confirmed tea drinker.

“We have the hotel and restaurant in burlesque. Every man is his own chief cook and chambermaid. For diversion we have the woes of others. For acquiring knowledge we have the stars to read, and for meditation we try to solve God’s reason for putting a gateway into this useless country.

“However, we are happy in our isolation. There is a sort of freedom in living here that is agreeable. The conventionalists of life have no claims upon me. I am beholden to no one and no one to me. As free as the wind to come and go, work or play, sing or howl. The pinnacle of my hopes, aspirations and desires is realized in that ecstatic moment when, filled to the chin with bacon and beans, I recline at my ease on the sunny side of a glacier and contemplate life through the hazy, somnolent contentment of a full stomach without a care to oppress me.

“Circle City is just now deserted, everybody is up at Klondike, or preparing to go soon. Klondike River is over 200 miles up the Yukon from here, and gold was found on it a few months ago. It is the richest district the world has ever known, and will produce millions this year. I returned here from the Klondike yesterday for grub and start back to-morrow. Flour is worth \$100 per sack of fifty pounds, and

everything else in proportion, and none to be bought. Live dogs are worth from \$2 to \$5 per pound; they are the horses in this country.

"The gravel is frozen from eighteen to twenty feet deep to bedrock, but we burn a shaft down and then drift, using fire instead of powder. The gravel runs in gold from \$5 to \$150 per pan, and a young fellow on a claim above me panned out \$40,000 in two days. I was offered \$25,000 cash for my claim. I still hold the ground, and will be either a millionaire or a pauper in the fall. Men cannot be hired for wages. Every newcomer in the camp is offered big wages, as high as \$50 a day, but seldom will any one work for another. The only phantom that stands in our way to the goal of the millionaire is Mr. Grub. I have provisions enough to last me until next June, and I am as well fixed as any man in the country. If the boats do not get up the river before July we will be in rather hard lines, but as one cannot help his ills by wailing them, we will look cheerful and feel certain that grub will be plentiful next year."

Returned Yukonites deny the story told by Frank Moss, of Great Falls, Montana, to the effect that 2,000 graves at Foty-Mile Post tell of the terrible sufferings of the gold seekers. F. C. Bowker says that so far from there being over 2,000 deaths on the Klondike during the past three years, there was nobody there to die until something less than a year ago, and since then there have been but three deaths in that whole

district so far as known. In the graveyard at Forty-Mile Post, which has served for all that section for some years past, there are only between thirty and forty graves.

Mr. Ogilvie, the Dominion surveyor in charge of the district, in a report to the Dominion Government complains sorely of the need of some kind of a court to settle the various claim disputes that are continually arising between the miners. He says that the force and virtue of miners' meetings prevailed until the mounted police made their appearance, after which sneaks had full swing.

The morality of the Klondike would seem to be of much higher order than is usually found in new mining camps, the presence of the mounted police seeming to have a most salutary effect. Mr. Ogilvie seems to regret it, for he says:

"The man who was stabbed here in November has quite recovered, but may never have the same use of his back as of old, having received a bad cut there. His assailant is out on bail, awaiting the entrance of a judge to try him. As the police are here there will be no lynching; it is almost a pity there will not."

Mr. Ogilvie takes up the subject of the liquor traffic also, saying: "The impression of the best men here, saloon men and all, is that the liquor trade should be regulatd, that no one but respon-

sible parties should be allowed to bring liquor in—men in business here of established reputation and having an interest in the country and the retail traffic—licensed as in the Eastern provinces, giving licenses to men of fair character only. Now any loafer who can gather enough money to secure a few gallons and a few glasses, and wants to have an idle time, sets up a saloon. It is my opinion that it is imperative that the business be brought under control at once, or it may develop phases that will be at least annoying in the future.”

An eyewitness says of the scenes in Dawson City:

“DAWSON CITY, N. W. T., June 17, 1897.

“P. BROWN.

“DEAR SIR: You request me to inform you all I could on the country, and I will tell you of it as it really is. We arrived safe and sound. We caught up with, and passed, nearly all who went over the sur head of us. We have been out and seen + es. There are mines here that have + at \$150,000 last winter to 150 feet of the am.

“This seems hard to believe; but when you see coal oil cans with more gold in them than you can lift, baking powder cans and pickle jars full to the brim, you begin to believe the marvelous stories.

“Work is not so plentiful now as it is during the winter diggings. Wages are \$10 a day at Dawson City, and \$15 out at the mines. Flour

is \$6 a sack, sugar, 25 cents a pound; bacon, 70 cents; eggs, \$4 per dozen. Clothing is still dearer in proportion. Good stoves and tents are hard to get at any price. They say work will be more plentiful next winter.

"Three steamboats have been up here this spring, so there are lots of provisions now. Dawson City is growing fast, although it is all tents yet. Lots sell from \$100 to \$8,000. If too many scab hands come in it will cut wages, but it is all right now.

"There is plenty of prospecting going on this summer. Men are striking out in all directions. You said if you could be sure of \$10 a day you would come up. A man is sure of nothing, but if he is willing to take the hardships he is bound to get more or less of it. A number of women came over the trail this spring. All of them that are willing to cook can sell all the bread they can cook at fifty cents a loaf. Meals are \$1.50.

"That claim of J. O'Donnell's is on Forty-Mile River at Poker Gulch. He sold his share last summer to Philip Kenney. Fred Hart and Bill Hase were his partners, and it is still owned by them. R. Crawford got beat out of his claim that he bought of Kelly in Seattle.

"If you come up, bring light things, as there is more profit in them. We hear that it is almost impossible to get the river boats to bring up freight, as they have more of their own than they can handle. Look this up, and if you are sure you can get through with freight bring all you can of first-class articles, and you will have good use or ready sale for them at once.

"W. R. GOODE."

"P.S.—I hear that R. Crawford has the matter decided in his favor at last, and got his share of the claim he bought of Kelly, and Kelly leaves for Seattle to-day on the boat. I think he is going to try to boom the country for the benefit of the mine holders to get cheap labor. That is, as I see things, and I think it is right. There is lots of money here, and where there is lots of it a man certainly can get a little. Please excuse mistakes and dirt, as I am seated on the ground, writing on my knee, and fighting mosquitoes."

A lady correspondent states:

"KLONDIKE, B. N. W., June 14, 1897.

"We arrived at our destination the 11th of this month, our outfit in good shape and all well. We were just three months to the day on the trail. Everybody was dumfounded at the discovery—the biggest that has ever been made. Just think of it—\$1,000 to the pan. Wages are \$15 a day, and men are refusing every day to go to work for that. Money is plenty, and all the trading is being done with gold dust. Harry Ash is taking in \$3,000 a day in his saloon. Meals are \$1.50 each. A big business is being done in smuggling whisky over the border. The dogs are so bad here that they eat anything from the tin cans to rubber boots, and it stands a man in hand to look to his bacon.

"I had a pleasant trip and had few hardships to encounter. We left so early that we had snow all the way, but the people that came a month earlier had a pretty tough time, for they had to pack everything, or hire it done, and had

to endure more. The worst feature of the country is the beastly mosquitoes. As far as the trip being dangerous, that depends a good deal on the men. One wants to get a good boat made, and with a map all is clear sailing in the right season.

"There is another stampede on up a creek near here. The excitement is at a fever's height and men are exploring every little creek and hill in the country. These are drift diggings and it would not surprise me if there were better diggings struck during the summer.

"The Indians here cannot speak much English. All they can say is 'sugar.' We could have got a whole mine, or 'lecraboo,' for twenty pounds of sugar. The moose and caribou are fine eating.

"The place is very orderly, considering the big rush. There is a fort or military post about twenty-five or thirty miles from here, with lots of her majesty's soldiers, but we don't need them. The theaters, dance halls, and gambling houses are doing the biggest business here and scoop in most of the money."

Joseph Ladue, the owner of the land upon which Dawson City has been built, has visited his native town, Plattsburg, New York, this summer, and in the course of an interview he said:

"We have nicer bars at Dawson than you have here. One of the bars there cost \$750 right in San Francisco. The day I left Dawson my impression of the town was that it would become a great big place. When I came away there were probably close on to 3,000 people there. I think

perhaps of these seventy-five were women. A good many of the women were wives of the men who came, forty or fifty.

"The dance hall was owned by Harry Ash. It is 40x80, a frame building covered with white drilling. They have an orchestra. There may be fifteen or twenty women there. There is no admission fee. You just go in and dance and patronize the establishment. Everything is fifty cents a drink. The women get a percentage of the receipts for dancing with the miners. Frequently when the miners feel flush, they give the women nuggets.

"When I left Dawson there were ten saloons and only three restaurants. They charge \$1.50 for a meal, which consists of bacon, beans, bread, coffee, a piece of cheese, and dried fruit. The restaurants were well patronized. They sold everything they could rake or scrape. Bacon was \$1 a pound, eggs as high as \$5 a dozen in the winter. Flour is \$12 a hundred pounds; sugar, 20 cents for brown, and 25 cents for granulated. Butter is \$1.50 a roll.

"Tobacco sells for \$1.50 a pound—chewing and fancy brands for smoking—plug cut is \$2 a pound; cigars wholesale sell there for \$90 to \$150 per 1,000; a single cigar is 50 cents. It would sell here for five cents.

"There are lots of children up there now. An

immense lot of children came in this spring. There is a school at Circle City, and one is being built in Dawson this year. The teacher in Circle City—which is near the Arctic circle and the furthest city north—was an American from Nebraska. I don't know what her name was, or what pay she got—probably \$75 a month.

“There were no churches in Dawson up to this time. There will be a Catholic church built this summer. There will probably be also an English church and a Presbyterian church too. Bishop Rowe, of Boston, has the latter in charge. Father Judge was there when I came away.

“There is a theatrical company in that district. It has been playing at Circle City. The leading actor and manager of it is George Snow. His wife is the leading lady. They are real good. They have all sorts of plays—‘Uncle Tom's Cabin’ one night, ‘Old Kentucky’ the next, ‘Camille’ the next, ‘The Newsboy’ the next. It is a repertory company. They will have a theater in Dawson this winter.

“We have Dr. Willis, a Canadian physician; Dr. Chambers, from Yakima, Washington. I think they charge according to the way a man is fixed. I know one man got a finger taken off and was charged \$200 for the job. These doctors have complete medicine chests. There is no drug store except what Dr. Willis has.

"We have a graveyard started and two graves in it. One is that of Bert Stickney, who died a natural death on Lake Labarge, and the other is that of C. G. Felch, who died of heart disease in the room over my office. We had service over these men, conducted by a Church of England man.

"There was a lawyer's office started just before I left by two Seattle lawyers. I do not remember hearing that any babies were born in Dawson before I left.

"The diggings are up the Klondike to the east of Dawson City. They begin within two miles of the town site, and extend twenty miles at least on both sides of the Klondike River. The district is about twenty miles square—that is, the gold-bearing district where the placer miners are.

"The whole country for twenty miles between the Yukon and the Klondike, up to the point where Dawson is situated, is composed of creeks, and all along these claims are staked out.

"The people who go there now will have to look for new fields. Pretty nearly all of the Klondike has been monopolized, and nearly all the claims taken up. From there they will have to go in an easterly direction to the Stuart River. That is about 100 miles east, and is the nearest district in which there is any promise of gold development, and it is uncertain.

"The Chilkoot Pass is not dangerous in the summer time. It is a defile in the mountains about thirty miles long, with just an Indian trail leading up to the summit. In the winter the danger lies in the storms which are liable to overtake the traveler.

"Men can cross that pass with as little danger in the summer as they can cross any other mountain pass. If you turn a horse loose on the trail he will walk over himself. I never heard of anybody starving to death on the Chilkoot route. I have heard of their being lost. I never heard of their dying of hardship. In the winter time the United States station has mail every month.

"I do not think the company's boats can bring supplies into Dawson for more than 3,000 men. There are probably 5,000 there now, and more going."

Heretofore mails have been somewhat infrequent and slightly irregular in the Yukon postal district, but they will doubtless be managed in a much more satisfactory way this winter. In view of the great number of American citizens who have gone or contemplate going to the Klondike gold fields in Alaska, the post-office department has made additional contracts for the carrying of mails to and from that region.

Since July 1 contracts for mail over what is known as the overland route from Juneau to

Circle City have been made by the department. The round trip over the Chilkoot Pass, and by way of the chain of lakes and the Lewis River, takes about a month, the distance being about 900 miles. The department has just been notified by the contractor's agent that a party will start regularly twice each month. The cost is about \$600 for the round trip. The Chilkoot Pass is crossed with the mail by means of Indian carriers. On the previous trips the carriers, after finishing the pass, built their boats, but they now have their own to pass the lakes and the Lewis River.

In the winter transportation is carried on by means of dogsleds, and it is hoped that under the present contracts there will be no stoppage, no matter how low the temperature may go. The contractor has reported that he was sending a boat in sections by way of St. Michael, up the Yukon River, to be used on the waterway of the route, and it is thought much time will be saved by this next spring, as formerly it was necessary for the carriers to stop and build boats or rafts to pass the lakes.

Contracts have been made with two steamboat companies for two trips from Seattle to St. Michael. When the steamers reach St. Michael, the mail will be transferred to the flat-bottomed boats running up the Yukon as far as Circle

City. It is believed the boats now run further up.

The contracts for the overland route call for only first-class matter, whereas the steamers in summer carry everything, up to five tons, each trip.

Mr. J. A. French, of the District Engineering Corps, and a member of the United States Coast and Geodetic Survey Expedition which made such a thorough tour of the Alaska gold fields, during the years 1889-90 and '91 when locating the 141st meridian, was asked if there was much chance of the expeditions which are leaving the country in August reaching the Yukon in time to ascend the river before ice forms.

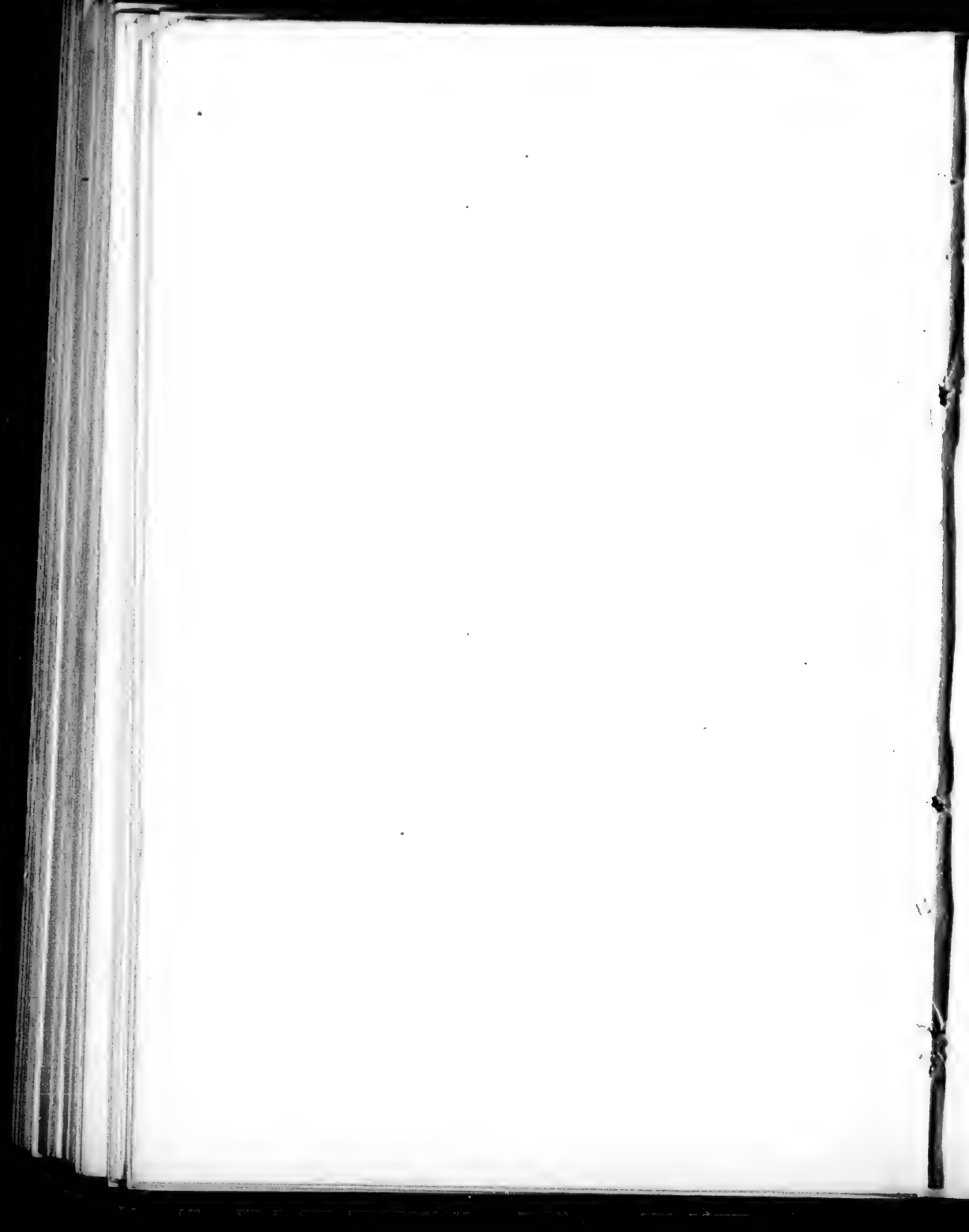
"There is very little chance that they can do so," said Mr. French. "Of course there is a possibility that the river may close late this year, and thus give them an opportunity of getting through, but this is a matter of conjecture only, and the majority of persons who are leaving for the far North at the present time will be obliged to winter at St. Michael. Those going by way of the Chilkoot Pass will be more successful about getting through, as it is but a short distance comparatively from Seattle, and can be traversed before the pass closes in the middle of September. The ice forms early on the Yukon, and that cuts off communication with the Klondike.

"Of course communication is possible by sledges, but that is only of nominal use, and is scarcely to be termed a means of transportation. And then again the latter part of September and the early portion of October are the dangerous periods for travel in that region. There is very little snow, and what snow there is usually falls during this period. Then it becomes so cold that snowing becomes impossible, and until March the miners and settlers in the Klondike will be troubled with no other snowfall. Instead of snow there is a daily fall of frost, which gradually increases the depth of the light snow which falls in the early fall, but scarcely in a quantity to exceed six inches. The frost falls continually, and the air is always filled with it. The frost gradually aguments the previous light snowfall, and before the snows of the spring begin have increased the depth of the snow to about eighteen inches.

"The cold reaches an extremity which is almost impossible for us to realize, but the conditions of the atmosphere are such that the suffering is not great in proportion. The Indians of the region have, to a great extent, solved the difficult question of keeping warm. They build log cabins, which are closed as tightly as mud and lichens can make them. They leave no space for a door, as that would facilitate the en-

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trance of cold; instead they follow out a plan of the Esquimaux and begin an entrance some distance from the hut. Down in the ground they dig a passage until it reaches underneath the center of the cabin, when the passage is directed upward, and the Indian finishes his door in the center of the house.

"There is a larger natural food supply than the majority of people imagine. A miner who enters the region in the spring could well supply his needs for the following winter. The river lands are filled with a species of cranberry, which is as palatable as the berries of our own Massachusetts. The berries are very small and tart, but are vastly superior to the ordinary Christmas-time berry, and can be kept during the entire season. Then also the Yukon Valley is in the line of the moose and caribou trails, over which the animals travel on their way to the north or south at different periods of the year, and it is possible for a hunter to supply himself with meat which can be frozen and kept in perfect condition until summer again.

"The great river is alive with salmon also, some of which reach an enormous size. One catch of five salmon which I saw while there averaged fifty-four pounds to a fish. The largest one was a beauty, and weighed exactly seventy-four pounds. The Indians catch these fish,

string them on a pole and throw them on the top of their huts to freeze. Then during the winter when they wish one, they go out and bring it into the warm cabin. The heat gradually thaws it until it is to some degree soft. Then they eat it with as much gusto, and apparently as much pleasure, as we would eat ice cream, and there is nothing frozen fish resembles more than ice cream. They are of a delicate pink color, which in the frozen state of the fish is as exact a counterfeit as one could imagine."

John Muir, the California naturalist and discoverer of the great Muir glacier, writes of the "The Alaska Trip" in the Midsummer Holiday (August) *Century*. Of Fort Wrangel, Mr. Muir writes:

"On the arrival of the steamer most of the passengers make haste to go ashore to see the curious totem-poles in front of the massive timber houses of the Indians, and to buy curiosities, chiefly silver bracelets hammered from dollars and half-dollars, and tastefully engraved by Indian workmen; blankets better than those of civilization, woven from the wool of wild goats and sheep; carved spoons from the horns of these animals; Shamen rattles, miniature totem-poles, canoes, paddles, stone hatchets, pipes, baskets, etc. The traders in these curious wares are mostly women and children, who gather on the

front platforms of the half-dozen stores, sitting on their blankets seemingly careless whether they sell anything or not, every other face blackened hideously, a naked circle about the eyes and on the tip of the nose where the smut has been weathered off. The larger girls and the young women are brilliantly arrayed in ribbons and calico, and shining among the blackened and blanketed old crones like scarlet tanagers in a flock of blackbirds. Besides curiosities, most of them have berries to sell, red, yellow, and blue, fresh and dewy, and looking wondrous clean as compared with the people. The Indians are proud and intelligent nevertheless, and maintain an air of self-respect which no amount of raggedness and squalor can wholly subdue.

"Many canoes may be seen along the shore, all fashioned alike, with long, beak-like sterns and prows, the largest carrying twenty or thirty persons. What the mustang is to the Mexican vaquero, the canoe is to the Indian of the Alaskan coast. They skim over the glassy, sheltered waters far and near to fish and hunt and trade, or merely to visit their neighbors. Yonder goes a whole family, grandparents and all, the prow of their canoe blithely decorated with handfuls of the purple epilobium. They are going to gather berries, as the baskets show. Nowhere else in my travels north or south, have I seen so many

berries. The woods and meadows and open spaces along the shore are full of them—huckleberries of many species, salmon berries, raspberries, blackberries, currants and gooseberries, with fragrant strawberries and serviceberries on the drier grounds, and cranberries in the bogs, sufficient for every worm, bird, and human being in the Territory, and thousands of tons to spare. The Indians at certain seasons, roving in merry lands, gather large quantities, beat them into paste, and then press the paste into square cakes and dry them for winter use, to be eaten as a kind of bread with their oily salmon. Berries alone with the lavish bloom that belongs to them are enough to show how fine and rich the northern wilderness must be.”

W. D. Yingst, of Salt Lake City, two years ago camped on the spot where Dawson now stands. He prospected the country for miles about that point, and took back to Utah several hundred dollars in nuggets, the largest of which weighed about an ounce and a half. For the benefit of those who are contemplating an adventurous trip to Alaska, Yingst readily consented to give the *Tribune* of his native city all his experience in the Klondike.

“It was two years ago that I made the trip,” said he. “I want to say before going into details that it is a dangerous undertaking, and

nobody ought to start out to make it with a dream of sudden wealth made at one blow. Nobody who is not in perfect health should think of venturing into that region. If they do they commit a crime against themselves and those who may be dependent upon them, as well as those who are to become their companions in the struggle."

The warning was peculiarly emphasized by a casual survey of Yingst's proportions. He is a massively molded man, full of animal vigor and great endurance. The scales will tell in his favor 190 pounds of solid flesh and muscle. His cool and decisive manner in conversation lend the conviction of a phlegmatic temperament, not easily disturbed by hardships or danger.

"Let me explain why those of delicate constitutions should not go to the Klondike," he continued, "and why they should not start at this time of the year, especially. In the first place you need \$1,000 in capital, 800 to 900 pounds of provisions, and everything necessary in the way of personal effects. In the next place you must get into the Klondike before October 1, if you have the determination to stick it out. After that date an attempt to make it is extremely hazardous, for the very apparent reason that in the face of falling snow and frozen streams your journey would become so necessarily slow that

the rapid winter of the Arctic circle is almost certain to lock the traveler in its embrace and cut off escape to the coast. All of these difficulties require the greatest sort of endurance.

"Now as to the reason why it would be a crime to foist yourself upon a limited population whose stores of provisions are never wholly adequate. Those whose supplies give out before the end of the winter-locked season are dependent upon their neighbors whose better discretion has provided for emergencies. Every person in the deplorable fix that I am describing cuts down the total provisions of the camp so much per capita and thereby increases the danger of starvation, for men who are fighting with Nature to wrest something from her in the face of adversity are too generous to let a fellow creature suffer. Illness is a hardship to those who are in health, for some one must attend to the wants of the sick person, and in the end the convalescent and his nurse have lost their time and broken their spirits in the mad rush.

"It must be recollected that civil authority does not really extend to these isolated points. The law is that made and enforced by the miners. It is my belief that the same methods adopted when I spent a winter in that region will be put into effect before the beginning of this winter. All those who have not provided

themselves with enough to go through the winter will be compelled to leave the camp by starting back to the coast. There will be no choice in the matter, either. It is a question of life or death with the population of Dawson, and no chances are apt to be taken. If it comes to a serious situation among those who remain the provisions of the camp will probably be called into a general storehouse, and every man and woman be given their allowance in common. There will be no use of kicking in that country; every one must abide by the will of the majority.

"Travel overland in Alaska, while confined to the level, can best be made in the fall of the year, not later than October 1. The ground has hardened then, giving admirable footing and quick travel. At no time during the winter does more than two feet of snow fall in the level country. I am not speaking of the fall in the mountains, which is unspeakable. Temperature is not a serious thing if you are clothed according to the fashion of the country. The summer season is no time to travel overland. We had some experience in that line while prospecting. The whole surface is covered with a species of moss about eight inches thick, and beneath it ground that was thawed for about eighteen inches. Every foot of the march you sink to the knee, impeding progress and consuming provi-

sions at the same time. These conditions of the surface also make prospecting more favorable in the winter season. We burned holes through the frozen ground and began our sluicing. Water has to be reached through the ice, but there is an abundant flow. I might add that the summer weather is intolerably hot.

"Clothing is an important thing to consider. Three suits of underwear of the fleece-lined variety are imperative. Hip rubber boots, at least two pairs ought to be taken, and besides a heavy canvas coat lined with fleece. Ordinarily coarse, heavy outside wear is sufficient. Furlined mits and warm caps are also necessary."

Will Rowles, bookkeeper for the Chattanooga Brewing Company, has just received an interesting letter from Ben Thomas, a friend of his who is in Alaska. Young Thomas went to Alaska some months ago from Denver, Colorado, and is doing well. He says: "We are all getting rich out here. Flour is selling as high as \$60 a barrel, while coffee is sold almost by the grain. It is very high. I am doing some prospecting, but most of my time is devoted to carrying on my business. This is the place for young men, and I advise you to come out here if you can.

"Now this is the fact. There is gold in Alaska for whoever wants it, plenty of it, but it is desperately hard to get. The man who comes here

looking for it must make up his mind to endure greater hardships than he has ever endured before. He has got to live on less and work harder, to get along with less comfort, and to put up with more things he doesn't like than he has ever done before. He must be willing to shut himself off from the outside world and much of the time from the society of his kind. He must be prepared to brave all sorts of dangers and to take his life in his hands, if need be. He must be fearless, courageous, strong, healthy and active. If he is all these and a hard worker, he'll get his gold, and if he has good mining sense he'll get a lot of it. It's here, plenty of it, more than will be taken out for a good many years. But it takes brains, muscle and grit to get it.

"The Indians have no idea of its value. In exchange for two handkerchiefs, a shirt and a pair of old pants, Mr. Grewe and his partner bought a caribou, which supplied them with fresh meat for a long time. Many of these animals are killed by the Indians, and that is where the only obtainable fresh meat comes from in the winter.

"A friend of mine has been down the Yukon to St. Michael. On the trip either way he says that at this time of the year there is no danger, and at most, for people of tough as well as of

tender skin, discomfort and inconvenience, on account of the myriads of mosquitoes, all of which are active twenty-four hours a day.

"It may seem strange that there should be such vast swarms of these insects in such a country, but it is easily explained. All over the surface of the country there is moss fifteen inches to two feet thick. In the winter the larvæ of these insects lie buried in the moss, safely protected from the cold under a blanket of snow. When the arctic summer sun melts the snow, the insects burst upon the world. The mosquitoes are not of the singing kind—they go to work at once.

"In the summer, too, traveling is difficult. On a sled over the snow, a man can pull 400 to 500 pounds, but in the summer one can hardly stagger along with 150 pounds, because the moss is soggy mud and water, and at every step he sinks to his knees. It is for this summer weather that rubber hip boots are essential.

"There has been a good deal of inquiry as to how the summit is crossed without very hard work. Let the man who undertakes the trip from Juneau at this time of the year be prepared for a good deal of back-tripping. This is very discouraging work. All the men who take in their year's provisions must expect it. Back-tripping means carrying the supplies in install-

ments. A man may carry 150 to 200 pounds a few miles; then he must go back to another supply, and so he really will go over some parts of the road five, six or seven times. Some men can get Indians to carry their pack for them over the summit; but with such numbers as are going there will not be enough natives to do the carrying. For those who cannot secure the services of natives, or who cannot afford to pay them, back-tripping is heart-trying. I have seen great husky men sit down and cry like children under this back-tripping. There are caches along the road, and places where the installments can be lodged on the trips from stage to stage. Sheep Camp is one of these places."

The Alaska Indians are not very satisfactory laborers. They do all the piloting on the river, and are used to carry wood at fuel stations. When an attempt is made to hurry them they go slower than before, and just laugh at the impatience of the travelers. Many of the women are married to white men. It is very rare to find an Indian who does any mining for himself. I only know one, Minook, a Russian half-breed, who has pretty good diggings on Minook Creek at the lower ramparts. He hires Indians at about \$3 per day, and is able to make them work. About twenty white miners have got in there now. Conflicting reports are current as to the value of the claims.

The miners at Forty-Mile and Dawson City, to prevent trouble between white men and Indians, have forbidden the sale of liquor to the natives on pain of expulsion from the camp. A sort of native liquor called hoochenoo is made from black-strap molasses, fruit, sour dough and brown sugar. It takes about a week to brew and its powers of intoxication are potent. In absence of other liquors miners sometimes indulge in this stuff.

There is not as much barter with the Indians as formerly. They have passed the bead and gewgaw stage, and are disposed to accept only money or useful articles. The trading companies dispose of a great deal of "Siwash tobacco" to them. This is long leaf tobacco in its natural state. Around Forty-Mile and Dawson the Indians buy the manufactured tobacco. They have all become great dandies and dress better than the white men. Many of them buy watches. There are many Indians in the country, especially wherever there is a mining camp.

One of the younger miners writes:

"We are getting ready to start out to-night; think of putting 75 or 100 pounds on your back and starting out for a week or two, wading in marshes up to your knees or mud to the same depth. Well, that is what a prospector can expect in Alaska. The moss is a foot deep everywhere, wet, and the mosquitoes are just awful.

What few horses are here are faring hard, as feed is scarce, but they charge \$1 a pound for packing stuff to the mines from Dawson, which is six to twelve miles distant, so a man with a few horses can make all the money he wants. A good dog is worth \$250."

The gold production is attended by commensurate difficulty, delay, expense and privation in the mining itself. The short summer of ninety days generates only sufficient heat to melt the snow, the ground itself still remaining frozen, it being necessary to pick it out like so much rock, and then melt the icy particles over a fire preparatory to washing.

It takes seventy days to get a load of freight from the coast into the mines, and, once there, flour sells at \$30 per hundred, meal at \$18 per hundred, meat at \$1 per pound, whisky at \$1.50 per drink, mining tools and supplies and clothing sell at almost their weight in gold, while medicine and hospital and surgical accessories are priced above rubies and diamonds.

Wages per day run from \$12 to \$16, with board per day at from \$4 to \$8.

Travel and freighting to and fro between St. Michael and the mines is through the medium of the dog-teams. They readily sell for \$150 per head, a crack team of six being worth \$1,000. The dogs, on fair Alaska mountains roads, will

make from twenty to twenty-five miles a day with a load of freight, while private traveling sledges have records of fifty miles and upward per day. The vehicle used for both freight and passenger traffic is a combination canoe and sled.

"The Klondike district takes its place as the richest placer diggings the world has ever seen. Last week we published an account of the result of the spring clean-up," says the *Alaska Miner*, "and as we glibly wrote of thousands and tens of thousands rescued from the sands of El Dorado and Bonanza Creeks we ourselves looked upon the account almost with incredulity.

"But there is no occasion to be alarmed at the startling nature of the statement. We have been very close to the most reliable sources of information for many months past. As far back as last March we gave a pan value analysis of the richest creeks. It is interesting in the line of recent events to look back and make comparisons.

"We talked with several men at that time who had spent most of the winter on the creeks, and as this was previous to the big rush they had many opportunities of noting the located claims which were being worked, and they also had the advantage of being present when panning was being done by the owners to ascertain the value

of the various claims. We expressed the opinion then that El Dorado would prove to be the richer creek, and our surmises have proved to be correct.

"How did we arrive at this result? We carefully kept a record of the panning results on both creeks, and the average at that time was as follows: On El Dorado Creek No. 3, \$3; No. 4, \$4.60; No. 5, \$8.50; No. 6 as high as \$153; No. 7, about the average of No. 6; No. 8 as high as \$60; from No. 8 to No. 16, from \$2.50 to \$10 on an average, although \$216 was washed out of one pan on the latter claim. From No. 16 to No. 37 all the claims were regarded as good, but not enough panning had been done to justify us in forming any opinion of the average value. Upon No. 37 a nugget worth \$360 of irregular shape was found. From No. 37 to rim rock there had not been sufficient prospecting done, but the opinion then was that all the claims were good.

"Even as far back as last March the best developed claim in the country was that of Clarence Berry, No. 6 on El Dorado, in which he then owned a half-interest. He also owned one-third interest in Nos. 4 and 5. He employed twelve men all the winter taking out pay dirt and depositing it upon the dump.

"To give an idea of the richness of the claim we cannot do better than say that Berry paid his

men \$1.25 an hour until some one offered more, and that every night he melted ice in his cabin and panned out sufficient gold from the frozen dirt to pay the wages of his men. Berry knew where there was very rich ground on his claim, and he very often panned out from \$10 to \$50 to the pan, and on one occasion he panned \$125. When requiring money it was only necessary for the owner of the claim to take out some of his rich ground and wash it.

"Every man who came here from the Yukon last winter after telling his story of the new diggings invariably had something to say of claim No. 6, so that it has probably been advertised better than any other mine on the Klondike. It is, therefore, with much satisfaction that we publish the result of the clean-up. We have had all kinds of estimates given us of the amount which Berry's dump would produce, and the highest we heard was \$100,000, so that in announcing the result as \$140,000 it goes to show what a rich country has been discovered, and furthermore it is substantial and satisfactory proof of the care with which the news from the diggings has been prepared for publication.

"We gave figures in the winter which showed that the lower portion of Bonanza Creek averaged all the way from \$10 to \$50 to the pan, up to No. 56 below Discovery. From Discovery to

No. 12 above the value was from \$5 to \$40. Then from there to No. 53 the average is from \$10 to 50 cents. From this point up the creek there had not been enough prospecting done to base any average upon. We hope soon to be in a position to give the results from various claims on Bonanza which may be depended upon, and we can then compare them with the panning average of the early summer as given above.

“We know that Rhodes has taken out probably \$150,000 from his claim, but then it was well developed, and we are expecting big results from there, but we want to get the information from a number of claims so as to get a right idea of the general value of the creek, and prove the assertion so often made of its continued richness from end to end. One thing has been learned in the Klondike, and that is that production is proportionate to development. We have found that the yield of gold follows the work done on a claim. When Rhodes made such a good showing at the start it encouraged others to open up their claims, and quite a number changed hands on Bonanza Creek and the owners left there for the coast to obtain sufficient supplies to last them for a long period. Then came the big returns from No. 6 on El Dorado, and the great excitement was transferred to that creek, and there were fewer absentee owners, and in consequence

more work was done, the evidences of which we have had ample demonstration of in the big sacks of gold which have been washed out.

"The largest results attract the most attention, therefore most of the stories which have reached the coast cluster about the few big producers, and of the sales made only those involving large sums are spoken of. There are a great many smaller sums than the ones spoken of which have been taken from El Dorado. But properties which in any other country on the face of the earth would attract universal attention are almost lost sight of in the Klondike, because they have only yielded \$10,000. \$15,000 and \$20,000. Next fall these same claims will be so far developed as to hold their own with the rest of the creek. Berry had a good start, and after reaching bed rock could command sufficient funds to hire men and pay them wages equal to the production of an ordinary placer mine. We have no particular reason to assume that other claims will prove less productive than his when they have had the same amount of labor expended upon them.

"Several men from Seattle went in with the first party this spring, and they are interested on Bonanza Creek and intend to prosecute work with all the men they can profitably employ.

"If a comparatively few men in the limited time

at their disposal are able to produce a million dollars from dirt raised to the surface during the winter months with practically no preparation at all, what will be the result when all the claims are being vigorously developed with plenty of labor to draw from? This is a very important question, and is one fraught with considerable interest to the great number of men now on their way to the mines. If we think a moment that there has not been a barren claim yet on either of the creeks the possibilities of the future are tremendous. Let us make this a little clearer. The panning in the winter gave promise of exceedingly rich results. These rich results have been attained in every instance where the claim has been worked. We have therefore the right to assume that similar results will reward the efforts of the owners of other claims on the same creeks which have been so productive this season. The only evidence one had of the probable value of a claim was the amount of gold obtained in a single pan. Suppose we follow this idea out for a moment.

“No. 6 on El Dorado Creek panned out as high as \$153 to the pan last winter before work was done on it. This is the claim which produced \$140,000 from the winter dump. Now the No. 7, next to it, yielded precisely the same results to the pan. Why will not No. 7, when it is

opened up as much as No. 6 has been, give the same results? Then again the next claim, No. 8, panned out as high as \$60 to the pan. The same argument applies to the third. The average of the panning from No. 8 to No. 16 is from \$2.50 to \$10 to the pan. This would make any of these claims from No. 7 to No. 16 produce as much gold as No. 3 did, with the same amount of labor expended on them. What would this mean? As a simple question of mathematics it would mean several million dollars alone for these few claims. This takes no account of claims No. 17 to No. 37, all of which are reported to be rich; but little work has been done upon them so far.

“When all the claims are in working order and producing gold in proportion to their development we shall see a state of things at the Klondike unprecedented in the world’s history. The man who took \$90,000 from 45 feet of his ground last winter, and has 450 feet yet left, and so far as he knows of the same average value, can, by putting enough men to work, clean up half a million next season. If this be true then there are others who have panned out from \$5 to \$40 in prospecting who have every reason to think that their claims will yield in like manner.

“We noticed as men went through here this spring that there were large numbers who expect

to hire out, and thus obtain a stake so that they may in turn spend some time in prospecting with an equal chance of discovering something good for themselves. Their places will be taken by other arrivals and the work of securing the gold will go on, and much country will be examined by men who will be encouraged and stimulated by the success of others. A man who can afford to hire men and pay them \$12 a day will get the advantage of a quick return. These diggings are essentially winter ones. Upon a claim of five hundred feet a large number of prospect holes can be sunk at the same time, and the pay dirt deposited on the dump, and next spring the owner of the claim will be in a position to realize enormous amounts of money from his property.

"The Klondike diggings may be regarded as permanent to the extent of several million dollars, and we have no hesitation in recommending men with some means to go in and try their fortunes in the gold-lined creeks of the far North, where endurance, perseverance, grit and a good outfit will be their best friends."

Undoubtedly the most vivid account of the actual staking out of the Bonanza diggings has come from the pen of Mr. Wilbur F. Cornell, an old newspaper man. He wrote: "Soon after getting to this place it was rumored about the stores and saloons that a new gold field had been

discovered on a tributary of Klondike River, about fifty-one miles up the Yukon from this place, and in two or three days every boat was gone from Fort Cudahy and the town of Forty-Mile, and only enough people were left to watch the business houses, and police barracks, and a few who could not get boats. I have seen so many of these 'stampedes' that they do not excite me, but as I had nothing better to do at the time, I got an assistant, as one person cannot take a boat up the rapid Yukon, piled tent, stove, and a month's provisions into my boat, and Eben and I started to see what and how much had been found. Nothing definite could be learned here, but it is human as well as animal nature to run with the herd, and the herd had gone pellmell to Klondike. Before I could pass Forty-Mile three more feverish individuals had persuaded me that their future in this world and perhaps in the next, depended upon their going with me; so they grasped the towline, and we are on the way.

"Going up-stream with a boat on the Yukon is laborious, the current being too swift to permit of rowing or paddling, so we pole when possible and tow or trick when we can't pole. My three passengers, two of the mounted police force and a steamboat engineer who has quit the steamer *Weare* for the stampede, are none of them ex-

perts in handling a boat by the peculiar method necessary on the Yukon, but as I have had several summers' experience we got along most of the time in cold drizzling rain, making camp where we can when night comes, but always on some gravelly bank, as the moss on level ground is as wet as the river itself. Before we reach the Klondike boats are passing down loaded with men who have been to the diggings. How gayly they shoot by us, with a five-mile current rushing them along, and how my friends at the tow-line, with shins blistered from sliding and stumbling over the rocks on the banks do envy them!

"'Hurry along boys; it's a big thing!' 'Take it easy; there'll be claims there for you next summer!' 'Five dollars to the pan on Discovery claim!' 'That you Cornell? Get a claim next me if you can; it's all right!' 'Yes, I've located; will sell for \$100!' 'Hello, Wilbur; don't let anything stop you; take enough grub over the mountain to last a few days and look around a little; it is going to beat Florence!'

"Thus they shout as they fly by, but the last remark was by a man who was with me at Florence, Idaho, in '62, and has been in all the good mining camps of the Pacific coast, and I would take his judgment on a mine as I would take twenty-dollar pieces; so I tell my companions that it is no wild-goose chase. We are on, and we

pull and pole with renewed energy, reaching the native village at the mouth of Klondike River the third evening. We are too tired and foot-sore to attempt the mountain that night, so we put up the tent and listen to the varying and exceedingly contradicting opinions of those who are camped in the vicinity and have been over the trail. Most of them are going back, and have come here for more provisions, which they left in the natives houses' and caches; some have to go to Forty-Mile Fork, and there is the usual proportion of those who promise themselves they will never see Bonanza Creek again and don't want a claim there. Then we see who is in the boats arriving every hour or oftener from Stuart River, from Sixty-Mile River, from Indian Creek, and from all over the Yukon Valley, and I wonder how they can have heard of the discovery, but find in most cases that natives have been sent for them by friends here.

"Then comes a Comanche yell from the brow of the first rise of the mountain over which the trail comes from Bonanza, and more yells until a stranger here would think we were about to be attacked by a whole nation of savages, and we look up through the bushes and see the rocks leaping down the steep declivity, and men are rolling and sliding along with them, and the yells increase, and rocks and men come faster,

until they reach the bottom 50 yards away. We shout too, and somebody propounds a question which the Comanches hear: 'Ten dollars to the pan, right in the bank of the creek on No. 11.' 'Above or below?' 'Oh, below, of course; nobody has panned any above.'

"You must be told that when a discovery is made on a creek that claim is called 'Discovery claim,' the adjoining claim above is 'No. 1 above,' and the first down stream is 'No. 1 below,' and the claims are numbered successively both ways so far as locations are made. The 'Comanches' are buttonholed to a fire, and the coffee pot is placed where it will boil quickly, frying pans are soon doing their duty, and the Comanches are talked to and at till they are pumped dry of information, and coffee is ready, and I know by the ferocity with which they attack the solid food and pour down the coal-black coffee that the trip to Bonanza Creek is not a picnic—though they say it's fairly good.

"Soon I see a few men slipping away from the small crowd and in a few minutes we hear the stones on the side of the mountain sliding again, and a man with a pack on his back is clambering upward, clinging to the small trees and bushes, all the time going but very slowly; and another person soon follows, and others follow in turn. It is getting dark, and I know we are too tired

to go far, and would have to stop somewhere in the mountain, without water, and though we would like to go, I am satisfied we would regret it the next day as we need rest badly and some of us are not as strong as those young Comanches who have come back. So we get into the tent and blankets and sleep until a boat's bottom grinds on the gravelly beach, and more men crawl up the bank, cook supper, and either start over the trail or go to sleep. And we try to sleep again and I am just about unconscious of trouble when I hear something moving in the tent, and I know what it is, for I have learned a few things along the banks of the Yukon from experience, and I can't be mistaken in the peculiarly gentle sound of a pan being licked. I seize the handle of a hatchet placed there for the purpose and I hurl that hatchet at the dog, and miss him, of course—who ever did hit an Indian dog with anything but a bullet?—and I postpone sewing up the hole in the tent the hatchet made, and sleep again until more boats thump the gravel on the shore, or more Comanche yells come from the hills; and so it is all night long.

“Daylight, and we have had breakfast and have fixed up small packs, and are making the stones rattle and are trying to pull up the small trees on the side hill. I have been doing this sort of thing all summer, and neither lungs nor muscle

are much exercised by the climb, but I soon find that all are not like me. Half a mile or less and the trail is not so steep. It is through thick woods, spruce and balm (cottonwood, the name here) and another of the poplar family, quaking aspen, and the ground is covered with moss—the green mosses of the lowlands with more or less reindeer moss and an occasional patch of Iceland moss, lycopodiums, and so many other kinds of mosses and plants that I won't try to remember them; besides there are the huckleberry and cranberry bushes.

“Then we came to a swamp, and the trail is more than ankle deep with water, but one cannot walk through these places out of the trail, so we plod through, and finally come to dry, solid ground for a mile or more, and some of us are getting very thirsty (the swamp water is not fit to drink), and we go up and up, hoping to get to a spring we have been told we would find before reaching the summit. A few cranberries keep me from getting thirsty, but the rest are differently constituted, I suppose. Occasionally a grouse flutters from the berry patches and alights in the low trees. He does not seem to understand this stampede business, and is disposed to remonstrate against being thus disturbed while picking the berries which nobody else wants.

"We do live to get to the small spring of water and we take a rest. Some men are coming down the trail; others come up the trail. One of the down-trail men takes an up-trail man to one side and whispers advice. All I can hear is the word 'pup.' In Yukon vernacular 'pup' means gulch. Every creek has its 'pup,' and if one of those 'pups' is thought worthy of being given a name afterward, it becomes sufficiently advanced to have pups also. So I conclude that somebody has found gold in one of these pups, but I am in woeful ignorance as to which particular pup is being alluded to.

"The sergeant 'Canadian mounted police,' though they haven't a horse within a thousand miles of here, gives his blankets to the other M.P., and we trot along. The engineer and the other M.P. begin a race for the summit. About every quarter of a mile we meet men, and they tell of rich prospects being found in different places along the creek; some of them think it is only in spots and on the rim rock; others are sure the creek is good from source to mouth; and now and then one will tell us it is all fraud, and the men who claim to have got big pans never got them. These pessimistic prospectors always look weary and fagged out, and I know they have had no breakfast, and perhaps no supper last night, and probably didn't sleep much. Strange what

an effect the want of a little food will have upon one's opinion upon any subject!

"At length we reached the summit. The engineer and the M.P. are not in sight. We lie down and breathe a little. The trees have become fewer as we have climbed upward, and we can see a part of the world around us. Oh, what a picture in the northeast, and what a beautiful foreground the Klondike Valley makes! We look up the valley and can see the windings of the silvery thread of water for fifty miles, and where it comes out of a gateway in the mountains fully 1,000 feet in depth."

An old Montana miner, Mr. Frank Aldrich, now at the diggings, has written:

"On June 10 we landed at Klondike. Here the wildest of gold excitements is just starting. The riches of California and Australia are not in it. I saw \$100,000 laying on a wagon sheet in one miner's cabin, besides every pot and pan in the house not in use for cooking purposes was full of gold. On Bonanza Creek, Red McConnell and Jim Tweed, old Bentonites, are worth \$100,000 each, and I could name fifty old-time friends that are strictly 'in the swim.' I purchased a mule for \$400 and was offered \$600 in one hour after. I have just located a claim on Dominion Creek, and am now busy packing supplies back to prospect it seventy miles from here. Bacon

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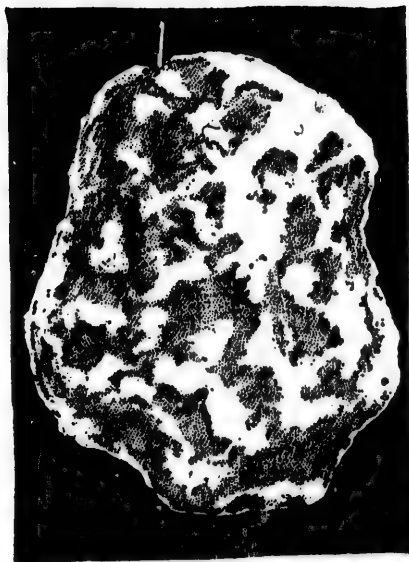
is selling at seventy-five cents a pound and is hard to get; and everything in proportion is correspondingly as high.

"Saloons run wide open here. Drinks fifty cents; whisky by gallon, \$20 to \$30. I saw one poker game yesterday with \$50,000 on the table. Bonanza kings with long buckskin sacks were crowding to get up to the bar to treat; got so much money they didn't know what to do with it. In all, it is the richest mining camp ever known in the history of the world; and next year it will be better. The steamer P. B. Weare went out of here the day before yesterday so heavily laden with gold dust in her office that extra props were put from the deck to the cabin, directly under the office. You and your friends will smile when you read this, but it is the truth, nevertheless, and you can come and see for yourself."

One of the largest nuggets so far received from the Yukon is one four inches long, weighing fourteen ounces, and valued at \$250. It was sent to the North American Transportation Company and has been presented to the Field Columbian Museum.

Inspector Strickland, of the Northwest Mounted Police, who has spent the past two years on the Yukon, states:

"There has been no exaggeration. I have



Nugget Weighing Fourteen Ounces and Valued at \$250.—
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seen nothing in newspapers in regard to the richness of the field that is not true. Great strikes have been made, but the amount of gold is unlimited. There are hundreds of creeks rich in gold-bearing placers never yet entered by prospectors. Of course all the claims in the creeks now opened are taken up, but those are only beginnings, I believe, of much greater finds. Some men I know, who struck paying streaks, took out as much as \$200,000. Others averaged between \$100,000 and \$200,000, while others again only range from \$5,000 to \$20,000."

"No imagination can conceive of the wealth in the Klondike and neighboring districts," said one lucky miner as he pulled a buckskin bag from one of his pockets and proceeded to edify his listeners with a magnificent display from one of his thirteen placer claims. "This is a sample of the kind of stuff we get when at the close of the day's work we wash out a bucket of dirt in order to pay the men their wages. The usual method is to pay for the day's operation out of a single bucketful of dirt. The dirt is washed out in the cabin and the wages, which are \$15 a day, are weighed on the scales. Gold nuggets and gold dust is all the money we know anything about in the diggings. Every man carries a pair of scales, and \$10 in dust is the day's salary of a common laborer. A miner who may be detailed

to cut wood receives the same wages as though he were in the bottom of the pit. I have been in Alaska off and on for fifteen years. Part of the time I was engaged in mining, and part of the time as a merchant. I know a good deal about the country, its climate and its peculiarities, and the chances which are offered to energetic men. My advice is for outsiders to stay away until next spring, and then will be the time to make a rush for a fortune. The excitement next summer will be much greater than it is to-day, and the difficulty in procuring miners will be more felt than at the present time. I would not be surprised if they will be paying \$25 a day for good miners, for everybody will be wild over prospecting. The day before I left the camp there were one hundred claims staked out on the banks of the river. Somebody went out on the bank and panned a pan of loose gravel at the surface. He found that it carried \$2.50 in gold, and the camp went wild."

In locating claims there was no attempt made to select the ground on the Klondike. The first man took No. 1 and the next man No. 2, and so on until the creek from where it enters the Klondike to its source in the mountains was taken up. Then the attention of the newcomers was directed to El Dorado Creek, which empties into Bonanza Creek a few miles from where the latter joins the Klondike River.

Here new surprises were met with. The first man who located a claim panned out \$5, and stayed right where he was, and now he counts his fortune by tens of thousands. With him were others, and one after the other the claims were staked out until not one remained from one end of the creek to the other. At its upper end there are two forks, and all the ground from rim rock to rim rock on both these forks was likewise located. We hear of some old-timer from California who accompanied a party of miners who were locating claims as they passed up the creek, who was constantly looking for favorable indications of gold before deciding to exercise his right to acquire a claim. He saw nothing to attract him until the whole creek was pre-empted, and as he returned he found that ground which he had discarded as being useless had changed hands for thousands of dollars, and not a pick had been used—ground which since then has produced \$100,000.

El Dorado has proved to be richer than Bonanza—that is, more gold has been taken from it. This may be accounted for from the fact that a large number of men who located on El Dorado went to work at once last fall, put down prospect holes, and after reaching bed rock drifted through the frozen ground and raised the pay dirt to the surface. This dump, as it is

called, was washed out this spring, and the results are something marvelous.

A man who had a rich claim would sink a hole and take sample pans from it as he went down, and by so doing he could form a very correct estimate of what he was doing. When he commenced to drift on bedrock this process was repeated, so that he always followed up the richest ground.

Clarence Berry's claim on El Dorado has been often spoken about. He placed a value of \$100,000 on his dump. What are the actual figures? To show the man's faith in his own property he proceeded to buy out his partners before the dump was washed out. To one of them he paid \$60,000, and to another \$35,000. Then, when the river melted, he washed the gold from the dump and realized \$140,000. The result of this transaction was that he cleared \$50,000 for a few months' work in the winter, and yet owns one of the most valuable mines in the district. When washing out the dump it is said that the gold was recovered at the rate of one ounce to the shovel. In other words, each man took out seventeen dollars a minute as he worked. It took barely a week to clean up all the gold from the winter's accumulation of pay dirt.

Archie McDonald worked forty-five feet of his claim up and down the creek, with the result

that his sacks now contain \$90,000 in gold dust. His claim is five hundred feet long; its value is \$1,000,000, if the ground is all of the same average value.

The news of the great strike on the Klondike reached Circle City early in September. Cobb, one of the returned miners, hurried up the Yukon, traveling day and night, carrying only the barest necessities in the way of supplies. He reached the mouth of Bonanza Creek, five miles above Dawson City, only to find that the best locations had been filed on. His last supplies were almost gone, and there was little or no provisions in the country. In his emergency, Cobb met Frank Phiscator, the Indian farmer, who came back on the Portland with \$96,000. Phiscator had just reached the new diggings, and was looking for a partner. The two struck up a friendship. Phiscator agreed to prospect up the Klondike from the mouth of the Bonanza, while Cobb followed the latter stream to its confines with the El Dorado, nine miles up. Each agreed to share with the other. A week after they separated Cobb had located a claim on El Dorado, and was thereby entitled by right of discovery to twice the amount of ground usually allotted. He hurried down to the mouth of the creek and found Phiscator returning from a fruitless search of gold. He told Phiscator of his find, and the two men hurried to Cobb's claim.

Phiscator located alongside of Cobb. The two men began work at once, the pans running as high as \$10 on the surface. They had struck it rich. Laying down his shovel after the second day's prospecting Cobb said: "Frank, this creek is studded with gold from here to headwaters. We will call it El Dorado," and so it has been known from that time on.

Asked as to the richness of the Klondike country, Mr. Ladue, the king of Dawson City, said: "I have not seen any late reports, but it is pretty hard to exaggerate it. Individuals may have exaggerated as to the amounts they have taken out, but as to the wealth of the country the reports are generally correct. I believe the largest amount taken out by one person was \$81,000 brought out by Frank Phiscator, of Washington. About \$2,000,000 have come out, and at that ratio it is fair to assume that \$15,000,000 will be produced by the same mines during the winter.

"The extent of the craze and quest for riches," continued Mr. Ladue, "may be judged from the fact that gold was discovered in September last, and that already 800 claims are staked within a radius of twenty miles of Dawson City. There is no jumping of claims. Three months' work each year is required to hold a claim. Failing in this the land reverts to the govern-

ment. The laws of Canada are stringent in such matters, and severe penalties are imposed for jumping or other interference with the rights of claimants. Each claim is 500 feet along the creek and extending to the foothills on either side."

Asked if he was correctly quoted as advising people not to go in until spring Mr. Ladue said: "Yes, it is too late to go in now. The gold fields are located 1,700 miles up the Yukon River. If many people go in it will be impossible to get provisions there in sufficient quantities. Next spring will be a better time to go than now. Nothing will be lost by the delay.

"The truth of the riches of this country has not been half told and no one can exaggerate the probable wealth to be found in this far-off country."

Ladue is forty-three years old. He left Montana in 1882, going to the Black Hills. Eight years ago he went to Alaska, where he prospected for a time; after which he engaged in business. Last September he removed his store to the present site of Dawson City.

In truth the riches of the Klondike seem almost fabulous. One miner says: "A panful of sand can be washed out in from three to twelve minutes, and \$2,000 was panned out from six pans of sand."

Another man has realized twelve ounces to the

pan—sometimes; but sometimes will do, if you count that up at \$17 to the ounce.

When we first heard reports to the effect that \$25 to the pan was often found it was thought wonderful; but from later accounts \$25 to the pan isn't in it now. Almost every man up there wants a piece of this ground for himself, turning up his nose at the idea of working for wages, when the said wages are not a cent less than \$1.50 per hour. One man has several men working for him at this rate, eight or ten hours daily; when the day is done he takes a panful of dirt, washes it out, and pays his men.

Dominion Surveyor Ogilvie says that rich fields in the Forty-Mile district, such as Miller, Glacier, and Chicken Creeks have been practically abandoned for the Klondike. Men cannot be got to work for love or money, and the standard of wages is \$1.50 an hour, and he repeats that some of the claims are so rich that every night a few pans of dirt is sufficient to pay all the hired help.

William Stanley, of Seattle, was a pauper eighteen months ago; now he is worth, perhaps, \$2,000,000. This is his story. "I went to Yukon as a last resort. I was getting old and had no money, and I knew that I would never get any wealth unless I took it out of the ground. It was a year ago last March that I left Seattle. I

made for the Yukon. I had never been there before. I knew nothing of mining and nothing of the hardships of the country, and in fact was as great a 'greeny' as ever set foot in the gold country of the Northwest. My brother Samuel went with me. He was as ignorant as my father.

"While we were on the steamship *Alki*, which took us to Dyea, we met two young men, Charles and George Worden. They were residents of Sackett's Harbor, New York, and had come west in search of gold. We became very intimate. They knew little if anything of the country, and one day in conversation one of us suggested that we form a company and do our work on the syndicate plan, each man to share and share alike. We wandered through the Yukon district for several months, and were getting discouraged because there seemed to be nothing for us. We met other men who were getting rich, but we grew poorer as the days came and went. Once we had about concluded to go back. It was in the latter part of last September that we befriended a man who gave us a tip as to the riches of the Klondike. We were willing to believe anything and made for the Klondike at once. At that time we were *en route* for Forty-Mile Creek. We were then at Sixty-Mile.

"The first thing we did when we reached the Klondike was to spend a little time at the mouth

of the stream. We were there just twenty-four hours when the steamer Ellis arrived with 150 excited miners aboard. They had just heard the good news, and on their arrival they made a rush for the richest spots on Bonanza and El Dorado Creeks.

"We went to El Dorado Creek and made locations on what were called Claims 25, 26, 53, and 54. I think it was in October that we made our locations. We worked Claims 25 and 26, and were very soon satisfied that we had a fine thing and went to work to make preparations for a long winter of experience and hardships. We got all we wanted before spring. Every man put in his time sinking prospect holes in the gulch.

"I tell the simple truth when I say that within three months we took from the two claims the sum of \$112,000. A remarkable thing about our findings is that in taking this enormous sum, we did not drift up and down stream, nor did we cross-cut the pay streaks. Of course we may be wrong, but this is the way we are figuring, and we are so certain that what we say is true that we would not sell out for a million. In our judgment, based on close figuring, there are in the two claims we worked, and claims No. 53 and 54, \$1,000 to the lineal foot. I say that in four claims we have at the very least \$2,000,000 which can be taken out without any great work.

"I believe there is gold in almost every creek in Alaska. Certainly on the Klondike the claims are not spotted. One seems to be as good as another. It's gold, gold, gold, all over. It's yards wide and yards deep. I say so because I have been there and have the gold to show for it. All you have to do is to run a hole down, and there you find plenty of gold dust. I would say that our claims on the El Dorado claims will average \$3, some go as high as \$150, and believe me when I tell you that in five pans I have taken out as high as \$750. I did not pick the pans, but simply put them against my breast and scooped the dirt off the bedrock.

"Of course the majority of those on the Klondike have done much figuring as to the amount of gold the Klondike will yield. Many times we fellows figured on the prospects of the El Dorado. I would not hesitate much about guaranteeing \$21,000,000, and should not be surprised a bit if \$25,000,000, or even \$30,000,000, was taken out. Some people will tell you that the Klondike is a marvel and that there will never be a discovery in Alaska which will compare with it. I think that there will be a number of new creeks discovered that will make wonderful yields. Why, Bear Gulch is just like El Dorado. Bear Gulch has a double bedrock. The bedrocks are three feet apart. In the lower

bed the gold is as dark as a black cat, and in the upper bed the gold is as bright as any you ever saw. We own No. 10 claim below Discovery on Bear Gulch, and also Nos. 20 and 21 on Last Chance Gulch above Discovery. We prospected for three miles on Last Chance Gulch, and could not tell the best place to locate the Discovery claim. The man making a discovery of the creek is entitled by law to stake a claim and take an adjoining one, or in other words two claims; so you see he wants to get in a good location on the creek or gulch. Hunker Gulch is highly looked to. I think it will prove another great district, and some good strikes have also been made on Dominion Creek. Indian Creek is also becoming famous.

"What are we doing with all the money we take out? Well, we paid \$45,000 spot cash for a half-interest in Claim 32, El Dorado. We also advanced \$5,000 each to four parties on El Dorado Creek, taking a mortgage on their claim, so you see we are well secured. No, I do not want any better security for my money than El Dorado claims, thank you. I only wish I had a mortgage on the whole creek.

"We had a great deal of trouble in securing labor in prospecting our properties. Old miners would not work for any price. We could occasionally rope in a greenhorn and get him to work

for a few days at \$15 a day. Six or eight miners worked on shares for us about six weeks, and when we settled it developed that they had earned in that length of time \$5,300 each. That was pretty good pay, wasn't it? We paid one old miner \$12 for three hours' work, and offered to continue him at that rate, but he would not have it, and he went out to hunt a claim of his own. My son Samuel and Charles Worden are in charge of our interests in Alaska."

The latest estimate of the probable output of gold in the Klondike comes from B. R. Shaw, a well-known insurance man, who left Seattle for the Klondike on March 15, reaching Dawson City two and a half months later. In a letter he says that a conservative estimate of the product of the camp during the next two years is \$50,000,000. Shaw is not an enthusiast, and besides he has had twenty years of experience in operating placer mines in California. This is how Shaw described Dawson on June 18: "There is no night here now. It is light as mid-day for twenty-four hours, and not so warm but that it's comfortable working out of doors. This gold strike is without doubt the greatest on the American continent, or in the world. Some of the pay streaks are nearly all gold. One thousand dollars to the pan is not uncommon, and as high as 100 ounces to the pan have been taken

out. As to the extent of the district it has not been prospected sufficiently to ascertain this fact. The people who came in here on the rush settled down on a half-dozen streams, all within an area of not more than 150 square miles, and the biggest paying streams were staked from mouth to source. They began taking out the pure gold at once, and little prospecting has since been done outside this locality. No one need fear all the good claims will be taken. There are thousands of miles square that have yet to be prospected.

"The Klondike joins the Yukon from the east a few miles above the site of Fort Reliance, about fifty miles above Dawson City. The discovery of gold in the branches of this stream was due to the reports of Indians. A white man named J. A. Carmack, who worked in 1887, was the first to hear the rumor and locate a claim in the lowest branch, which was named by the miners Bonanza Creek. Carmack reached his claim in August. He had to cut some logs in order to get a few pounds of provisions to enable him to begin work on his claim. He returned with a few weeks' provision for himself, wife and brother-in-law, in the latter part of August, and immediately set about working his claim. The gravel he had to carry in a box on his back from 30 to 100 feet. Notwithstanding this, three men working very

irregularly washed out \$14,200 in eight days, and Carmack asserts that if he had had proper facilities he could have washed out the gold in two days. The branch of the Bonanza Creek called El Dorado has developed magnificently. Another tributary, Tilly Creek, has been worked with profit. There are 170 claims staked out in the main creek and the branches are thought to be good for as any more. The location aggregates 350 claims, which will require over a thousand men to work properly.

A few miles further up, Bear Creek enters the Klondike. It has been prospected and claims located. About twelve miles above the mouth of Bear Creek, Gold Bottom Creek joins Klondike. In a branch called Hunker Creek very rich ground has been found. On Gold Bottom Creek and its branches there will probably be two or three hundred claims. The Indians have reached another creek much further up, which they call "Too Much Gold" Creek in which the gold is said to be so plentiful that the miners say, "That you have to mix gravel with it to sluice it." Up to date nothing has been heard from this creek.

"From all this we may think," reports Surveyor Ogilvie, "that we have here a district which will give 5,000 claims of 400 feet in length each. Now, 1,000 such claims will require at least 3,000 men to work them properly, and as wages

are from \$8 to \$10 per day, we have every reason to assume that this particular territory will in a year or two contain 10,000 souls at least, for the news has gone out to the world, and an unprecedented influx is anticipated next spring. And this is not all, for a large creek called Indian Creek joins the Yukon about midway between Klondike and Stuart River. All along this creek good pay dirt may be found. All that has stood in the way of working it heretofore has been the scarcity of provisions owing to the difficulty of getting them up there. Indian Creek is quite a stream, and it is probable that it will yield five or six hundred claims.

"Further south lie the heads of several branches of Stuart River, on which some prospecting has been done this summer and good indications found, but the want of provisions prevented development. Gold has been found in several of the streams joining Pelly River, and also along the Hootaliqua. In the line of these finds further south are the Cassiar gold fields in British Columbia, so the presumption is that we have in our territory along the easterly branches of the Yukon a gold-bearing belt of indefinite width, and upward of 300 miles long, exclusive of the British Columbia part of it.

"Quartz of a good quality is reported in the hills around Bonanza Creek, but of this I shall

be able to speak more fully after my proposed survey. It is pretty certain from information I have obtained from prospectors that all, or nearly all, of the northerly branch of White River is on our side of the line, and copper is found on it. I have seen a specimen of silver ore said to have been picked up in a creek flowing into Bennett Lake, about fourteen miles from its mouth."

Mr. John G. Whitlock sent a communication to the *Examiner*, that is vouched for by Mr. Tremain, of the Prospective Mining & Machinery Company of San Francisco, and Mr. Tremain is good authority for any statements he may choose to make. Full confidence may therefore be put in this report. He said:

"You will no doubt be surprised to know that I am up here. I came a year ago this spring. I have a claim on El Dorado Creek, which runs into the Klondike River. I had a partner who came here with me and died last winter. We had a mild winter, and it is not so cold as some say or think. I came down to Dawson to send this off, as the boat leaves in a few days. Now to business. I told you when I saw you last that I would turn up all right in time, and so I have. The gold mines here are wonderful—the biggest in the world. You would not believe half if I told you, but as there will be some gold going to Portland you will see for yourself. Now, I want

to ask you, can you come to this place at once? There was a claim next to mine that sold for \$60,000 a few days ago. I will not send any gold out this time. I washed out in six days about \$6,000, and I want to stay here another year or two. Provisions are going to be very scarce. If you will pack up and leave Portland at once, and bring up grub enough to last three of us one year, we will give you a half-interest in the biggest thing you ever struck. As you know, I am an old miner and know what I say. My new partner and I have each got \$10,000 piled away in a sack. I am sure that in one year from now we three—you, my partner and I—can take out \$500,000 and not try at all. My cabin is half a mile from the diggings, and many a time I pick up little nuggets that will weigh from an ounce to two ounces. I was on Cook Inlet a long time. We have been here only four months and have over \$30,000 to show. How is that? Now, don't listen to any one. You come up here. It will take only \$500 worth of provisions. Come by the way of Juneau; never mind the expense, it will beat living in Portland, anyway.

"One man will take out \$200,000 this trip for four months' work by himself. What we want is food and plenty of it. If you will come and take this offer we will let you in as we say. We have got the biggest thing of any of them. I

have made the offer to two others, so come as quick as you can. I know you have the money and can come if you want to, still I cannot afford to wait. Business is business, you know. I shall expect you on the September boat at Dawson, if you come that way, but if you come the other way we will wait a reasonable time. As for gold, we have more gold than bread. I may get a million out of my claim if my ground figures out all right. I got \$331 out of one panful of dirt not over ten pounds weight. There were over thirty-nine nuggets in all."

The total of the wealth acquired by the men directly heard from is as follows:

Gold brought to San Francisco.....	\$649,850
Claims held by men landing in Seattle....	2,490,000
Gold brought to other coast points.....	670,000
Definite reports from Alaska.....	541,500

Total.....\$4,351,350

These figures only relate to the diggings of a few score men, and there are nearly 5,000 miners in the Klondike region. It has been estimated that the total amount of dust and nuggets obtained, without reference to the value of any of the holdings, was upward of \$5,000,000.

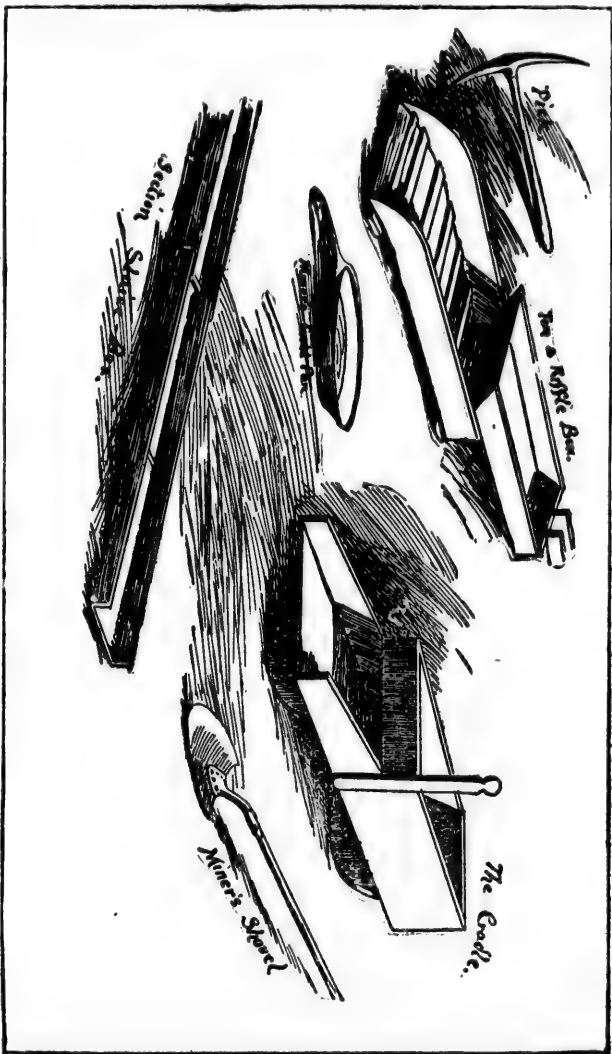
When the steamer Portland arrived at Seattle from the far North, gold in boxes, gold in blankets, fine gold and coarse gold, gold nuggets

and gold dust, the yellow treasure of the Klondike diggings, were carried ashore. A ton and a half of gold was a part of the load the steamer had brought from St. Michael, Alaska, and with the 3,000 pounds of gold were the several owners, sixty-eight miners, some with \$45,000 some with \$10,000 some with \$50,000, a few with \$100,000 and over, but all with gold. When the steamer came to port the miners put their bags on their shoulders and walked down the gang-plank in the presence of a vast throng of Seattle people assembled to see the great pile of treasure from the rich fields of the far North. A miner with only \$5,000 in his bag easily carried his fortune. Twenty thousand dollars in two bags is a good load for any stalwart man, no matter if he has worked where the mercury falls to 60 degrees below zero. Two men used all their strength in carrying a strapped blanket in which was about \$50,000. The few with the big fortunes \$100,000, and over, had to hire help to get their precious possessions to a safe place of storage in Seattle.

The sacks were of various kinds and sizes, and were principally made of buckskin and rawhide. When each package had been weighed and the clerks and assistants had cut them open, the spectators crowded around craning their necks to behold the gold which meant so much to the owners.

After the gold dust reaches civilization it goes to the smelter. The room where the casting is done is always hot. The floor is covered with iron. Along one side are canopies of iron that look like the tops of bakers' ovens. These canopies may be closed in front, and they rest on platforms of iron in which are countersunk the places for the reception of the crucibles. The fuel is gas and air under pressure. It attacks the vessel of clay in which the plumbago crucibles repose with a roar that can be heard a block away. A faint glow at first colors the clay pot, over which has been placed a cover, also of clay; then it becomes red and then white, while greenish and blue flames play all around it. It is necessary to turn off the blast before the crucible can be looked into, so fierce is the heat. Down in the bottom of the white mass there is a line that indicates where the gold ends. When it has become a homogeneous compound, by an instinct born of experience the operator lifts the cover; then the blast is withdrawn. A pair of tongs lifts another cover from the crucible itself, and the mold is lifted into a pan standing on the iron platform. The tongs are brought into requisition, and the crucible is turned above the mold. A thick lip of red metal protrudes itself, and from under it, in a thin, white stream, runs the gold into the iron mold. A thick cloud of

vapor arises from the contact of the melted gold and the grease with which the mold has been smeared. By this time the clamps are loosened, the brick has set and is lifted—a black and unattractive rectangle—into a basin of water. It is soon cooled, and is scrubbed with a brush and soap. Then it looks not unlike so much brass. It is cleaned thoroughly, the dirt that may have been mixed with it is removed and the bar is weighed. That is all that there is to it. When the dust and nuggets are brought in they are simply turned into the crucible. The bars are all stamped in a dozen places on both sides, and the paying for it completes the deal.



A Miner's Working Outfit.—Page 195.



MINING METHODS.

THE following is a non-technical account of placer mining by a Chicago writer:

"To give a homely but reasonably truthful illustration of placer mining, take a bushel of coarse sand mixed with gravel, a bushel of earth such as you see taken from a city excavation, a considerable proportion of clay, a little cement, a double handful of shot varying in size from the smallest birdshot to the largest buckshot, and imagine all this stuff to be mixed thoroughly together about the consistency of the soil on the shore of Lake Michigan, where the surf beats it into some sort of compactness. How would you go at it to extract the shot in the least possible time and at the least expenditure of labor? If you had heard of placer mining you would wash the earth away and save the shot.

"All you need is a pan and plenty of water. Any sort of flat vessel, from a soup plate to a dish pan, will answer the purpose. The miner's pan is shaped like a cake pan with a flat bottom. When a prospector starts out he takes one made

of tin or sheet iron. Gather with your hands, or a pick, or a shovel, a quart of this mixture just described and put it in the pan. Fill the pan nearly full of water. The earth will be softened into mud. Add more water. Then tilt your pan over a very little and the soft mud will run out over the top of the pan. Continue the operation and in ten or fifteen minutes the earth has run off and all that you have left in the pan is the shot, which, being heavier than the earth, has sunk to the bottom, together with any gravel you may have thrown in originally. The work of separating the shot from the gravel after the earth has been washed away is very easy.

“Substitute particles of gold for your leaden globules, and the wildest kind of a mountain country for that to which you are accustomed, and you know just what the men in the Klondike region have been doing all winter and which has electrified the world. In the manner above described they have been washing the precious metal from earth found on a very rough, broken region larger than the city limits of Chicago. The miners had no other appliances but the pan and the water of the creeks flowing through the Klondike district until the spring time, when they set up sluices. What makes the authentic reports from Alaska so startling is the extraor-

dinary yield of gold to the pan. In the creek beds they have picked up chunks of solid gold, single nuggets worth \$1,000 or more. Of course, these are exceptional even in the new El Dorado.

"In the language of miners, the earth from which gold is extracted is called dirt. Any earth which yields ten cents of gold to the pan is known as pay dirt; fifteen cents to the pan is good, and twenty cents is rich. A miner working in dirt that runs six to ten cents to the pan earns from \$2.50 to \$3.50 a day, as he is able to wash about forty panfuls a day, the number depending on the character of the dirt. Some panfuls yield \$100 in precious metal. The gold that remains in the pan after the dirt has been washed away is called dust. Some of it is fine as the finest sand, some the size of a pinhead, and some as large as a pea or the end of your little finger. Lumps are called nuggets.

"The gold itself is the measure of the day's, or the month's, or the season's profit. An ounce of it is worth, if pure, \$20. You can buy as much of anything you want for an ounce of dust as you can do for a \$20 gold piece. All stores in mining districts are provided with gold scales, and the miner's gold is accepted as so much coin of the realm. The quantity of gold it takes to make a dollar is surprising to one not accus-

tomed to handling the metal. So much dust as you can hold on the largest blade of your pocket-knife is worth \$5 to \$7.50. When you consider that this small quantity is the yield of thirty or forty pans you can imagine how little bulk there is to the gold saved in one pan. A coined gold dollar is much smaller than a silver dime. Now, if a miner can save in one panful of dirt the tenth part of a gold dollar he is making fair wages. Some of the gold is in such fine particles that it floats and does not sink to the bottom like a shot. A considerable portion of such floating gold runs over the top of the pan and is lost. It is estimated that in the first placer mining in California about one-fourth of the gold was thus lost. To this day Chinamen are engaged in panning the refuse dirt of early miners, and they make from \$1.25 to \$2 a day in the operation. In Klondike, where so much of the gold is coarse, the miners lose very little of the precious metal by reason of its floating away. Placer mining is the simplest of all processes for getting gold out of the ground, and can be carried on only when there is an ample supply of water. All reports from Klondike agree that the best diggings are in the beds of creeks, and that the further down they get the richer the dirt, until bedrock is reached."

A Canadian government report says that the

process of "placer" mining in Alaska is about as follows: "After clearing all the coarse gravel and stone off a patch of ground, the miner lifts a little of the finer gravel or sand in his pan, which is a broad, shallow dish, made of strong sheet iron; he then puts in water enough to fill the pan, and gives a few rapid whirls and shakes; this tends to bring the gold to the bottom on account of its greater specific gravity. The dish is then shaken and held in such a way that the gravel and sand are gradually washed out; care being taken as the process nears completion to avoid letting out the finer and heavier parts that have settled to the bottom. Finally all that is left in the pan is whatever gold may have been in the dish and some black sand, which almost invariably accompanies it.

"This black sand is nothing but pulverized magnetic iron ore. Should the gold thus found be fine, the contents of the pan are thrown into a barrel containing water, together with a pound or two of mercury. As soon as the gold comes in contact with the mercury it combines with it and forms an amalgam. The process is continued until enough amalgam has been formed to pay for "roasting" or "firing." It is then squeezed through a buckskin bag, all the mercury that comes through the bag being put back into the barrel to serve again, and what remains

in the bag is placed in a retort, if the miner has one, or, if not, on a shovel, and heated until nearly all the mercury is vaporized. The gold then remains in a lump, with some mercury still held in combination with it.

"This is called the 'pan' or 'hand' method, and is never, on account of its slowness and laboriousness, continued for any length of time when it is possible to procure a 'rocker,' or to make and work sluices.

"A 'rocker' is simply a box about three feet long and two wide, made in two parts, the top being shallow, with a heavy sheet iron bottom, which is punched full of quarter-inch holes. The other part of the box is fitted with an inclined shelf about midway in its depth, which is six or eight inches lower at its lower end than at its upper. Over this is placed a piece of heavy woolen blanket. The whole is then mounted on two rockers, much resembling those of an ordinary cradle, and when in use they are placed on two blocks of wood so that the whole may be readily rocked. After the miner has selected his claim, he looks for the most convenient place to set up his 'rocker,' which must be near a good supply of water. Then he proceeds to clear away all the stones and coarse gravel, gathering the finer gravel and sand in a heap near the 'rocker.' The shallow box is filled

with this, and with one hand the miner rocks it, while with the other he ladles in the water. The finer matter with the gold falls through the holes on the blanket, which checks its progress, and holds the fine particles of gold, while the sand and other matter pass over it to the bottom of the box, which is sloped so that what comes through is washed downward and finally out of the box. Across the bottom of the box are fixed thin slats, behind which some mercury is placed to catch any particles of gold which may escape the blanket. If the gold is nuggety, the large nuggets are found in the upper box, their weight detaining them until all the lighter stuff has passed through, and the smallest ones are held by a deeper slat at the outward end of the bottom of the box. The piece of blanket is, at intervals, taken out and rinsed into a barrel; if the gold is fine, mercury is placed at the bottom of the barrel, as already mentioned.

"Sluicing is always employed when possible. It requires a good supply of water, with sufficient head or fall. The process is as follows: Planks are procured and formed into a box of suitable width and depth. Slat are fixed across the bottom of the box at intervals, or shallow holes are bored in the bottom, in such order that no particle could run along the bottom in a straight line and escape without running over a hole.

Several of these boxes are then set up with a considerable slope, and are fitted into one another at the ends like a stovepipe. A stream of water is now directed into the upper end of the highest box. The gravel having been collected, as in the case of the rocker, it is shoveled into the upper box, and is washed downward by the strong current of water. The gold is detained by its weight, and is held by the slats or in the holes mentioned. If it is fine, mercury is placed behind the slats or in these holes to catch it. In this way about three times as much dirt can be washed as by the rocker, and consequently three times as much gold is secured in a given time. After the boxes are done with they are burned, and the ashes washed for the gold held in the wood.

“A great many of the miners spend their time in the summer prospecting, and in the winter resort to a method lately adopted and which is called ‘burning.’ They make fires on the surface, thus thawing the ground until the bedrock is reached; then drift and tunnel. The pay dirt is brought to the surface and heaped in a pile until spring, when water can be obtained. The sluice boxes are then set up and the dirt is washed out, thus enabling the miner to work advantageously and profitably the year around. This method has been found very satisfactory in places where

the pay streak is at any great depth from the surface. In this way the complaint, which has been so commonly advanced by the miners and others, that in the Yukon several months in the year are lost in idleness is overcome. Winter usually sets in very soon after the middle of September and continues until the beginning of June, and is very cold. The mercury frequently falls to 60 degrees below zero, but in the interior there is so little humidity in the air that the cold is more easily endured than on the coast. In the absence of thermometers, miners, it is said, leave their mercury out all night. When they find it frozen in the morning they concluded that it is too cold to work and stay at home. The temperature runs to great extremes in summer as well as in the winter. It is quite a common thing for the thermometer to register 100 degrees in the shade."

On the westerly side of the Yukon prospecting has been done on a creek a short distance above Ft. Selkirk, with a fair amount of success, and on a large creek some thirty or forty miles below that point fair prospects have been found. But, as before remarked, the difficulty of getting supplies there prevents any extensive or extended prospecting.

The report continues: "When it was fairly established that Bonanza Creek, a tributary of the

Klondike, was rich in gold, which took a few days, for Klondike had been prospected several times with no encouraging result, there was a great rush from all over the country adjacent to Forty-Mile. The town was almost deserted. Men who had been in a chronic state of drunkenness for weeks were pitched into boats as ballast and taken up to stake themselves a claim, and claims were staked by men for their friends who were not in the country at the time. All this gave rise to such conflict and confusion, there being no one present to take charge of matters, the agent being unable to go up and attend to the thing, and myself not yet knowing what to do, that the miners had a meeting and appointed one of themselves to measure off and stake the claims and record the owners' names in connection therewith, for which he got a fee of \$2, it being of course understood that each claimholder would have to record his claim with the Dominion agent and pay his fee of \$15.

"As to the extent of mining districts they should, I think, be made large, and Section 21 amended to enable a man who has located a claim which does not pay a reasonable return on outlay the first season after his claim has been prospected, to make a second location in the same locality or district, provided he can find one in it. The agent would have to determine

whether or not he had expended the proper amount of labor on his claim to get reasonable returns; this, I know, opens the door for a lot of trouble, and maybe fraud, but, on the other hand, a great many worthy men suffer from the want of some such regulation, and a very few would be in a position to take advantage of such a provision until after their second season, and then there would hardly be anything left for them to take. Enterprising, industrious men, who would work almost continuously, might get some benefit, probably would, but no others, so such a regulation could not do very much harm, and might help some deserving people. As it is now, men stake claims on nearly every new find, some having several claims in the Klondike locality. They know, I believe, that they will not be able to hold them, but as the localities are not yet clearly defined, they can hold on to them for awhile, and finally, by collusion with others, acquire an interest in them."

The same surveyor reports that a quartz lode showing free gold in paying quantities and testing more than \$100 to the ton has been discovered nineteen miles from the Yukon. His information was that the lode is from three to eight feet in thickness. "I am confident," he concludes, "from the nature of the gold found in the creeks, that many more quartz lodes, and

rich, too, will be found. The yellow metal is not found in paying quantities in the main river, but in the small streams which cut through the mountains on either side. In most cases the gold lies at the bottom of thick gravel and clay deposits. The gold is covered by frozen ground in the winter. During the summer, until the snow is melted, the surface is covered by muddy torrents. After the snow is all melted and the springs begin to freeze, the streams dry up. In the Klondike district there are 134 rich claims being worked; two men on each claim. Many claims beyond this number are staked off, but the yield of gold is poor in comparison."

In the spring the sluicing begins. Several of these boxes are then set up with a considerable slope, and are fitted into one another at the ends, like a stovepipe. A stream of water is now directed into the upper end of the highest box. The gravel having been collected, as in the case of the rocker, it is shoveled into the upper box, and is washed downward by the strong current of water.

It is safe to assume that not ten per cent. of the people who have recently started for the Klondike country, or who contemplate going, have any knowledge of either placer or quartz mining. Few of them know the meaning of "pan," "rocker" or "tom," but all have an

abiding faith in their ability to learn how to operate these things. To the old-time gold-miner the pan is an indispensable companion. It is twelve inches in diameter at the bottom, and from fifteen to sixteen inches on the top, the sides inclining outward at an angle of about thirty degrees, and being turned over a wire around the edge to make it strong. It is generally used in prospecting and cleaning gold-bearing sand, and in collecting amalgam from the sluices. There is a certain amount of skill required in its use, which can only be gained by actual practice. The pan is filled with dirt and submerged in a tub or pool of water, and the gravel worked with the hand until all the hard material is disintegrated. Of course stones are cleaned and thrown out and then what remains in the pan is carefully washed. By a circular motion and the use of the water all the lighter dirt is worked to the top and over the edge until only the fine gold remains.

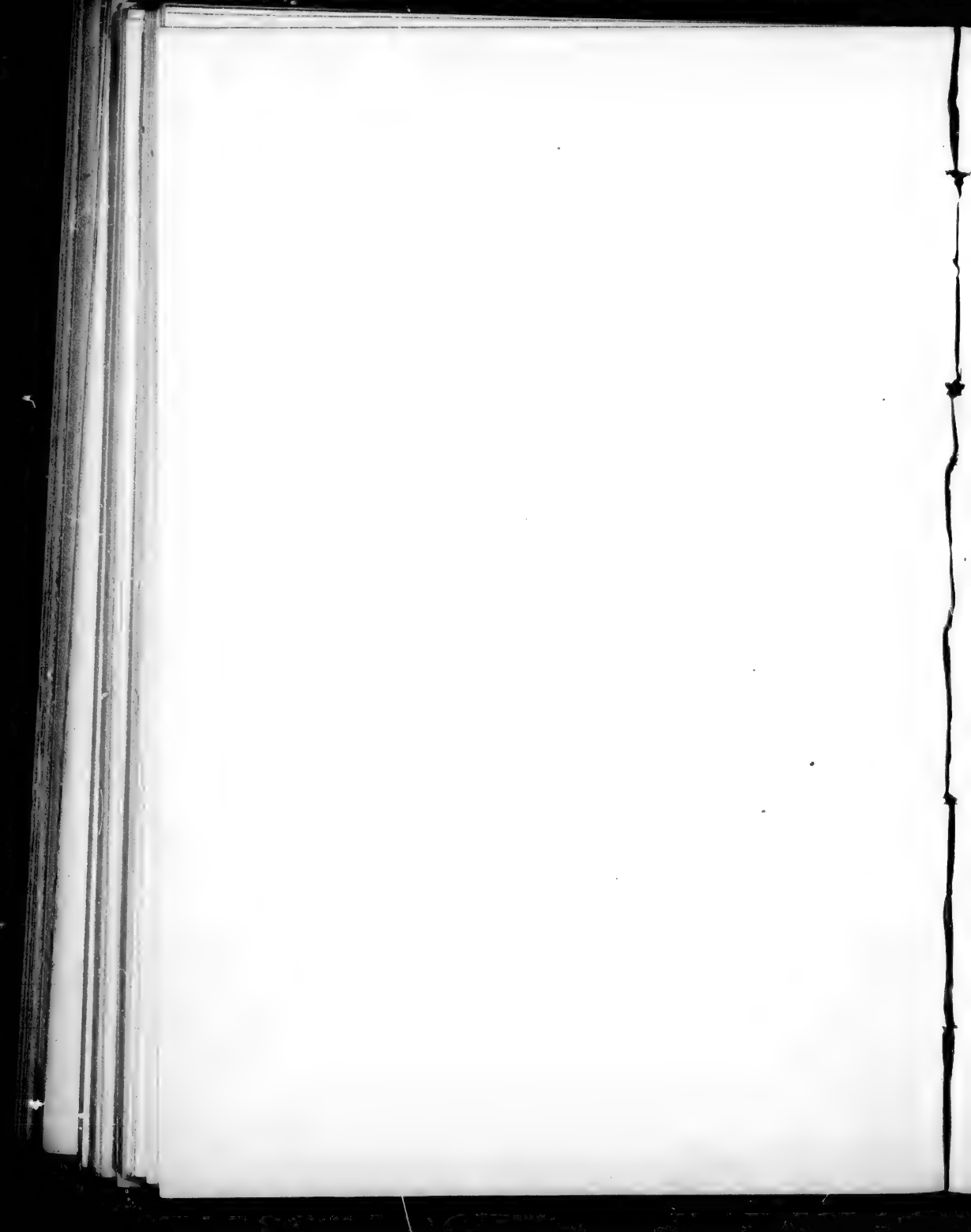
A box forty inches long and sixteen wide on the bottom with the twelve-inch sides sloped like a cradle, constitutes the rocker. The upper end is a hopper twenty inches square and four inches deep, with perforated iron bottom with half-inch holes. Under the perforated plate is a light frame placed at an incline upon which a canvas apron is stretched, forming a riffle. The

gravel is thrown into the hopper and water is poured in with a dipper held in one hand while the other is employed in "rocking" the cradle. The water washes the sand to the bottom of the hopper and the gold is caught in the apron or picked up in the bottom of the rocker, while the sand and lighter material are discharged at the lower end. In the "tom" the miner finds a rough trough twelve feet long, fifteen by twenty inches wide at the top, thirty inches wide at the lower end, and eight inches deep for its entire length. If the "tom" be set on timbers or stones, it is given an incline of one inch to the foot. A sheet-iron plate perforated with holes—say half an inch in diameter—forms the bottom of the lower end of the trough, which is beveled on the lower side in order to keep the plate on a level. The sand when fed in from the sluices on striking the perforated plate is immediately sorted, the fine dirt with the water passing through it, while the coarser dirt and rock is shoveled off. Under the perforated plate is a flat box into which the finer gravel passes. By the continual discharge of water through the plate and with the occasional aid of a shovel, the sand is kept loose, allowing the gold to settle.

The mining methods of the Klondike are very strange and are adapted to peculiar conditions.



Gold Miners at Work.—Page 209.



There pay gravel happens to lie several feet below the mucky beds of the creeks and must be mined out. At nearly all the other Yukon placers ranged along the river for 300 miles, the gold is in surface gravel. In these diggings little or nothing can be done except from about June 15 to September 1, when the water runs.

On the Klondike the running water prevents mining out the gravel under the creek beds, and so it is all taken out during the months when everything is frozen solid, and when the icy chains break in the short summer the gravel that has been mined is quickly sluiced and the gold cleaned up. Prospecting consists of sinking a shaft to bedrock by the creek, by alternately thawing the ground with fires and digging it out. When the bottom is reached the prospector knows more than he did before. If a pan of bottom gravel washed out with water from melted ice shows up rich the claim is worked by tunneling in.

In doing this dry wood is placed against the face of the drift, and other pieces are thickly set slantwise over them. As the fire burns gravel falls down from above and gradually covers the slanting shield of wood. The fire smolders away and becomes a charcoal-burning. It is in this confined stage during the night that its heat is most effective against the face of the drift.

Next day the miner finds the face of his drift thawed out for a distance of from ten to eighteen inches, according to conditions. He shovels out the dirt, and if only a part is pay dirt he puts only that on his dump. Thus at the rate of a few inches a day the drifting out of the precious gravel goes on during the long winter.

The descriptions by the returned miners show that, as usual, while much of the gravel just above bedrock is wonderfully rich, the bedrock itself is the richest depository. The bedrock appears to be everywhere cracked and broken up by frost and glacial action. It is thus full of crevices and interstices filled with a clayey gravel, and it is these crevices which yield most richly. "Creviceing" is familiar to all placer miners, but there is here something unusual—a phenomenal multiplication of crevices in bedrock, and they are described as often extending downward several feet. No specimens of the rock have been brought down, and there is no reliable identification of it as yet. This bedrock is so greatly broken up in the way described that no blasting is necessary. It is easily removed with picks, and is simply thrown on the dumps to be sluiced as the gravel is.

The gold so concentrated in the crevices sticks to the clinging gravel and clay, and is in the residue which is shoveled out too, of course.

Not one has given the slightest description of the fields as a mining engineer would like to hear it. Inquiry as to whether any "mining expert" had been heard of in the Yukon elicited the reply:

"Yes, there is a fellow up there who pretends to know a lot, I believe. That's 'Swift-Water Bill.' I don't know his other name."

A Mr. Grewe is one of the lucky Argonauts. When he went to Alaska he proceeded to Forty-Mile Creek, about 700 miles overland from the coast, and in the midst of what have been recently termed the Klondike gold fields. The location can be seen by reference to the accompanying map in this book. It was on one of the branches of the above-named creek where he and his partner staked off their claims. The miners always work in couples, as to do the work properly requires two men, especially when they toil through the winter; and that is necessary if health permits and one determines to make big money.

"The first thing done," said Mr. Grewe in describing the operations of himself and companion, "was to sink a shaft alongside the creek twenty to forty feet deep, this work being done in the winter. First of all a fire was built where the shaft was dug, in order to melt the ice, which is usually three or four feet thick, and get at

the soil. Then picks are used until a sufficient depth is obtained. From this shaft are run tunnels in the bed of the creek, the water of which, of course, is frozen solid. Before this is done, however, a windlass is rigged with two buckets, and all dirt, sand or gravel hauled up and piled near by. In these tunnels are built fires, which are left to burn over night and then in the morning commences the work of removing the slush and sand, which is hauled to the top of the shaft and added to the pile of frozen dirt and gold already there. Such work as this is continued all winter."

As the tunnels are run with the course of the stream it should be understood that the dirt or sand sent to the top of the shaft is the sediment deposited at the bottom of the river. While, says Mr. Grewe, the man in the tunnel has the more comfortable half of the job, still he suffers much from the smoke, the only outlet for which is the shaft. The man at the windlass has a terrible time of it, because, as the thermometer ranges from 40 to 60 degrees below zero and sometimes lower, he is frequently compelled to quit work.

In summer, and that season is only from three to four months long, active outdoor work begins. The ice melts and the streams are swollen. Then the miners build sluices, or troughs,

usually twelve in number, which are placed end to end and a stream turned into them. The first few are of smooth bottom, and the last three are crossed with cleats. The sand is thrown into the head of the sluice, and by the time it reaches the last sluices the gold is there deposited. The quantity of gold caught in this manner varies greatly, and much of it is naturally lost. Sometimes in a bucket of dirt there may be three or four ounces of gold. The largest nugget Mr. Grewe found was worth \$7.

Captain J. F. Higgins, who has commanded one of the river boats, says:

"The word Klondike means Fish River, and the stream is called the Fish River on the charts. It empties into the Yukon fifty miles above the Big River. The geographical position of the junction is 76 degrees, 10 minutes north latitude, 138 degrees, 50 minutes west longitude. Bonanza Creek dumps into the Klondike about two miles above the Yukon. El Dorado is a tributary of the Bonanza. There are numerous other creeks and tributaries, the main river being 3,000 miles long.

"The gold so far has been taken from Bonanza and El Dorado, both well named, for the richness of the placers is truly marvelous. El Dorado, thirty miles long, is staked the whole length and as far as worked has paid.

"One of our passengers who is taking home \$100,000 with him has worked 100 feet of his ground and refused \$200,000 for the remainder, and confidently expects to clean up \$400,000 and more. He has in a bottle \$212 from one pan of dirt. His pay dirt while being washed averaged \$250 an hour to each man shoveling in. Two others of our miners who worked their own claim cleaned up \$6,000 from one day's washing.

"There is about fifteen feet of dirt above bed-rock, the pay streak averaging from four to six feet, which is tunneled out while the ground is frozen. Of course the dirt taken out is thawed by building fires; and when the summer thaw comes and water rushes in, they set their sluices and wash the dirt. Two of our fellows thought a small bird in the hand worth a large one in the bush, and sold their claims for \$45,000, getting \$4,500 down, the remainder to be paid in monthly installments of \$10,000 each. The purchasers had no more than \$5,000 paid. They were twenty days thawing and getting out the dirt. Then there was no water to sluice with, but one fellow made a rocker, and in ten days took out the \$10,000 for the first installment. So tunneling and rocking, they took out \$40,000 before there was water to sluice with.

"Of course, these things read like the story of Aladdin, but fiction is not at all in it with facts

at Klondike. The ground located and prospected can be worked out in a few years, but there is an immense territory untouched, and the laboring man who can get there with one year's provisions will have a better chance to make a stake than in any other part of the world."

According to Dr. W. H. Dall, one of the curators of the National Museum at Washington:

"The yellow metal is not found in paying quantities in the main river, but in the small streams which cut through the mountains on either side. These practically wash out the gold. The mud and mineral matter is carried into the main river, while the gold is left on the rough bottoms of these side streams. In most cases the gold lies at the bottom of thick gravel deposits.

"Blasting would do no good on account of the hard nature of the material which would blow out just as out of a gun. The shafts vary in depth from six feet up to eighteen or twenty. The gravel taken out is dumped into a pile and left till spring, when sluice boxes are made and the dirt washed out. When the creeks thaw in the spring the miners work day and night at their sluicing in order to get as much of their dump washed out as possible before the creeks get low. In the crevices running across the creek are found a great deal

of gold, and from these come the big pans of which so much has been said. These crevices are split in the bedrock, and act as basins to catch the gold washed out by the creek.

"Up to this time all the work has been placer mining, and few, if any, investigations have been made as to the quartz deposits. The returned miners say that there is not the slightest doubt of the existence of rich quartz ledges, and it is expected that they will now be looked into, and plans made to work them by the gold hunters whom the announcement of the late discoveries has started for the fields."

The claims on the Bonanza are numbered from the point of discovery both up and down the creek. These claims are 500 feet long and extend from "mountain to mountain." When a miner stakes a claim it costs him \$15 to record it, and \$100 each succeeding year. He is obliged to work the claim for three months in each year. If it is left idle it can be jumped. The location of claims is not restricted to Americans, but is open to all nationalities.

Mr. Ogilvie announces the location of a quartz lode showing free gold in paying quantities along one of the creeks. The quartz has tested over \$100 a ton. The lode appears to run from three to eight feet in thickness, and is about nineteen miles from the Yukon River. Good

quartz has been found also at the head of a branch of the Alaska River near the head of the Chilkat Inlet inside the summit of the coast range in Canadian Territory; also along Davis Creek in American Territory. The hills around Bonanza Creek also contain paying quartz. Copper in abundance is found on the southerly branch of the White River, and silver ore has been picked up in a creek flowing into Bennett Lake. Mr. Ogilvie says that the placer prospects continue to be more and more encouraging and extraordinary.

"It is beyond a doubt," he says, "that three pans of different claims on El Dorado turned out \$204, \$212, and \$216, but it must be borne in mind that there were only three such pans, though there are many running from \$10 to \$50. Since my last, the prospects on Bonanza Creek and tributaries are increasing in richness and extent, until now it is certain millions will be taken out of the district in the next few years. On some of the claims prospected the pay dirt is of great extent and very rich. One man told me yesterday that he washed out a single pan of dirt on one of the claims on Bonanza Creek and found \$14.25 in it. Of course, that may be an exceptionally rich pan, but \$5 to \$7 per pan is the average on that claim, it is reported, with five feet pay dirt and the width yet undeter-

mined, but known to be thirty feet; even at that figure the result at nine to ten pans to the cubic foot, and 500 feet long, is \$4,000,000 at \$5 per pan. One-fourth of this would be enormous. Enough prospecting has been done to show that there are at least fifteen miles of this extraordinary richness, and the indications are that we will have three or four times that extent, if not equal to the above, at least very rich."

Short extracts from longer statements follow:

"I do not know in the whole Klondike region a single claim that has not paid handsomely, and there are still hundreds of claims that have not been worked."

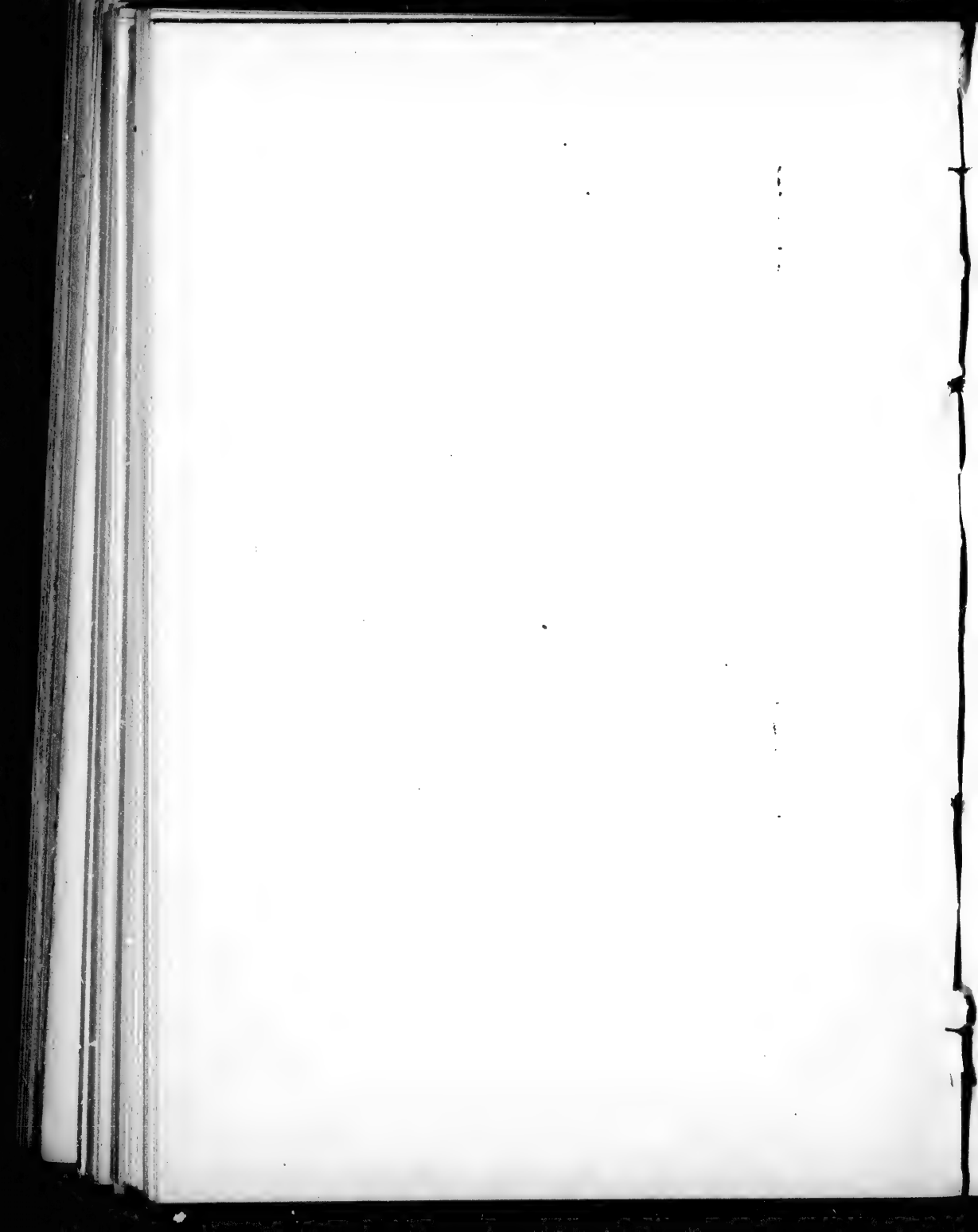
"In testing a claim the prospector sinks a hole, say fifteen feet, and then tries a pan of dirt. If the pay streak has been reached he sets to work in earnest to gather in more of the precious metal."

"I have seen men to hoist in a day as many as 250 loads of soil, each weighing 250 pounds. This is not disturbed until spring, when it is washed out; and when a man buys a claim he buys the dump also, but he takes his own chances on the latter."

"Under the new ruling each claim is 500 feet along the bottom of the creek, the width being governed by the distance between the mountains. This will average 600 feet, though there are some claims 1,000 feet wide."



Miners Washing Gold.—Page 219.



In ordinary panning there is little chance of mistaking gold, both by its yellow color and by its separating itself from all other matter by its specific gravity. If a prospector wants to show the "colors" he generally winnows down the matter on the pan till there is scarcely a teaspoonful, or much less; then by moving the pan to and fro sideways he will show the yellow gold appearing at one end of the teaspoonful of other matter like a gilt edging, so to speak, commonly showing very distinct by its gold-yellow color—which may be a rich gold-yellow or a paler tint. The "other matter" may be composed, especially if there are stamp mills up stream, of comminuted iron pyrites. The gold, however, will be distinct from this by its richer color, and also will readily separate itself from it by its gravity, forming a sort of gilt edging around the "other matter." Pyrite will appear of a duller, more tin-like, or brass-like, or even greenish color than the bright gold. The other common residual matter is so-called "black sand," usually composed of magnetic iron. This certainly will not amalgamate under any circumstances. Grains of platinum, sometimes—but rarely—occurring with placer gold, will, however, amalgamate. You can separate the black sand by picking it off with a magnet. Bronze or yellowish oxidized mica, from its light

specific gravity, quickly separates from the gold and is winnowed off, commonly at an early stage in the winnowing process, or must finally pass away in faithful winnowing of the residuum. Bronze mica does not carry any appreciable amount of gold.

Gold does sometimes occur in leafy, chaff-like forms in a placer, when it will float on the surface of the water, and you may find it difficult to keep it from washing away with the other stuff. If you let the pan dry and let the flakes adhere to the bottom, directly you put water in the flakes will float again. Of course they will amalgamate. Gold is generally pretty distinct yellow gold in a placer, though often tarnished in veins.

A "lay" means a privilege to work another man's claim, and to "burn" a "lay" means to thaw out a hole by building a big fire on the ground.

Upon the banks or in the beds of streams in gold territory, there will be found, as everywhere on streams, an admixture of sand, gravel and soil. These have been mixed together by action of the water pouring down the streams and hillsides for ages. Just how gold has been formed is not known, but in this admixture of sand, gravel and soil it is found in particles so small as to be about invisible, and from that on up to the size

of birdshot, garden peas, hazelnuts, and now and then nuggets the size of pigeon eggs. But for the most part they are the size of shot. If a pan of dirt will yield ten cents' worth of gold, it is called "pay dirt" and will yield fair wages to work. If it yields fifteen cents, it is promising, and if twenty cents it is called "rich." As the average miner can gather and work forty panfuls a day, if the dirt is rich, it will be seen that he can make \$8 a day. But the Klondike places of the poorest yield are reported as turning out not less than thirty cents' worth of "dust" to the pan, and in some places as high as \$1 to the panful have been found.

An ounce of this gold "dust" at the mines or elsewhere is worth from \$15 to \$19, according to its purity, in coined gold, and passes for "money" in the diggings or vicinity, and is often the only money they have in the early stages of the mining. As every store, or merchant, in a mining town has gold scales, and accepts "dust" as so much coined money or paper currency, but little inconvenience results in business.

Owing to its remarkable affinity for gold, mercury is extremely useful to the miner; unfortunately its weight has hitherto prevented its being generally employed on the Yukon. It may be distributed in the sluices, or better still,

used in connection with copper plates that are then said to be "amalgamated." The copper plates that it is desired to coat with quicksilver are first covered with clear water two or three inches deep. The water is then acidulated with sulphuric acid until it tastes like strong vinegar. After a short immersion, and when perfectly bright, the plates are taken out, and before becoming quite dry are rubbed with quicksilver, the rubbing being done with a piece of chamois skin. The plates are then washed in cold water and fitted to the bottoms of the sluices. Any "free" gold brought to them by the current is immediately attracted and remains fast to the surface of the plate. When the plates are heavily incrustated with gold they are removed, strongly heated over live coals and the precious metal scraped off.

PROSPECTING.

THE prospector is the pioneer in the work of mineral development. He is the pathfinder to hidden wealth. His part is wholly initiative; his rôle is at an end almost invariably with the establishment of a fixed value on his "find." Yet without the prospector we should be as free of mines as the country would be of approved methods of manufacture without the inventor. An individual idea is essentially an originality, and it is but natural that when a man chooses an avocation he has ideas peculiarly his own concerning its conduct. The adaptation of peculiar individual ideas in the conduct of mining operations, from the quest for a paying ledge to the development of a mine to a point of profitable extraction, has been the cause in nine instances out of ten of every mining venture recorded as failure. Mining is admittedly a business, but only when conducted along legitimate lines. Mining requires ability and experience, push and perseverance, essential factors to success in any enterprise. Its adoption by a novice, like

anything else, must needs be attended sometimes with disaster, but if pursued with tact and energy, governed by the exercise of common sense and a willingness to heed the advice and counsels of more experienced men, mining offers to-day as safe a channel to competency as does banking or the various lines of trade.

Prospecting, from a mining standpoint, might best be termed a search for rocks containing mineral of recognized value. Prerequisites of the prospector, would he have success crown his efforts, are brains, brawn, and perseverance. He is fortunate, indeed, if he has armed himself, prior to embarkment to the pursuit, with a knowledge of practical assaying, and of geology sufficient to give him an insight into the various formations and the indications usually illustrated thereby, and of mineralogy, that he may with a fair degree of accuracy know the different ores, and reasonably approximate their commercial worth. By a fair idea of practical assaying is meant the ability, minus a furnace and the usual field assay outfit, to arrive at a reasonably close idea of the value of an ore with the aid of a home-made affair or a blacksmith's forge, and such chemicals as every experienced prospector of our times now deems as requisite a part of his outfit as his pick, shovel, and pan. His insight into geologic conditions he must gain by that

best of preceptors—observation; of mineralogy by as careful a comparison of the different rocks encountered. If possessed of the knowledge outlined, the shrewd prospector will take careful note of the topographical conditions governing the area about to be prospected, and as far as possible gain some idea concerning its geological features. The rocks termed “float” will next engage his careful attention. Float, singularly, is a detached piece of quartz, or ore, from a ledge, lode, or deposit of like material. A piece of float picked up for examination is found smooth and well worn. This fact is evidence that its mother lode lies at a distance from where it is found. If its contour, on the contrary, be rough, and its edges pointed, the chances are good that the ledge from which it was detached is close at hand. This last described float found by the prospector, he should next carefully scrutinize all rocks in the vicinity, looking to the right and to the left as he proceeds, and turning over all loose rocks in his search for an outcrop, or the exposed portion of the vein or lode, whence came the waif float. We will suppose the outcrop discovered. The prospector should next ascertain its strike or trend, *i.e.*, the direction in which it runs, either north, east, south, west, etc. This may be determined by excavating a series of cross-cuts on the surface of the vein at

distances apart as equal as possible. These open cross-cuts will also demonstrate the thickness or width of the lode, its uniformity and general surface condition. This work completed, care should be exercised in ascertaining the value of the surface ore contained in the deposit. If assay results are satisfactory, the work of actual development may be proceeded with.

So far as demonstrated some sixty or seventy elements form the earth's crust. Omnipresent among these elements is oxygen. The coloring element is as predominantly iron. Aqueous, igneous, atmospheric, and organic agencies are constantly changing the character of this crust. Atmospheric agencies—winds, frost, etc.—in chemical combination with oxygen and carbonic acid cause a disintegration and crumbling of the different minerals. The aqueous agency, or action of water, causes a wearing away or erosion of these minerals; the same agency often forcibly removing them to long distances. The igneous agency, or action of fire, is constantly renewing the mineral deposits of the earth's crust through the medium of eruptive action, or warm springs. Organic matter found on the crust may be traced to deposits of vegetable matter. Rocks are either hard or soft, stratified, or unstratified. A stratified rock is either arenaceous (sand), argillaceous (clay), or calcareous (lime).

A stratified rock in its natural position should be horizontal; but it may have been thrown up to any angle by reason of volcanic action. The unstratified rocks being lower than their stratified brethren, through the action of volcanic influences, often cause the stratified rocks to enfold or entwine with themselves, causing the great irregularity of stratification.

The angle formed by the plane of the strata with the plane of the horizon is the "dip" of the rock. The strike or trend of a mineral formation is always at right angles to the dip. Non-conformity in stratification is caused by the violent upheavals and dislocations of such strata, as noted in several mineral districts. What is termed a "joint" is best described as a crossing of the stratification by a regular fissure; hence the term "a true fissure vein."

Cleavage is a term used in connection with the division of rocks into small sheets, or planes.

Eruptive rocks form a distinct class. To it belong granite, porphyritic granite, syenitic, albitic and graphic granite. Granite is composed of quartz, feldspar and mica. The porphyritic granite is distinguished by its excess of feldspar; the syenitic because it contains hornblend instead of mica; the albitic is easily distinguished by its white color; and in the graphic granite quartz predominates.

Trap rocks, so called, are compositions of greenstone, basalt, trachyte and serpentine. The greenstone is generally found to be composed of feldspar and hornblend of a greenish color. The basalt is a black or darkish brown colored rock, its component parts being augite and feldspar. The serpentine is a silicate of magnesia, usually of a greenish hue. The trachyte is a variety of lava of a dark-green color.

To the class termed volcanic rocks belong obsidian, a melted lava, appearing like smoky glass; pumice, a feldspathic cinder, very light in weight; and scoria, the slaggy exudation of volcanoes.

Among stratified rocks are gneiss, a stratified granite; syenitic gneiss, containing hornblend, instead of mica; mica schist; hypogene limestone, blue in color; chlorate schist, a magnesian mineral, soft and flexible; hornblend schist, colored by oxide of iron to a greenish-black color; clay slate, an argillaceous rock; and the various members of the quartz family. The three principal members of the quartz family with which the prospector will deal are the vitreous, calcidonic and jasper. Among the vitreous varieties are amethyst, a purple colored rock, colored by oxide of manganese; the topaz, color yellow; smoky quartz, known as cairngorm quartz; milky quartz and the yellow, green, and red quartzes.

Oxide of iron is the coloring element in all these rocks. Calcidonic quartzes are known as the sardonyx, carnelian, agate, onyx, cat's-eye and flint hornstone. The jaspers are the opal, touchstone, bloodstone and wood jasper.

Quartzite is a quartz sand metamorphosed by pressure into a hard mass through the agency of silica. It occurs in the large masses, inter-stratified with limestones, slates, and schists.

There are five members of the spar family, and all are distinguished by their coloration. Feldspar is either of a white or pinkish hue, and pearl spar of a pearly luster. Fluorspar is generally in masses, though often found in cubes. Heavy spar, or baryta, is known by its brown or dark brown color. Calspar, or calcite, is a crystalline carbonite of lime, white, red or yellow in color, these colors being the result of the mixture of iron, manganese, and other coloring impurities.

The inexperienced prospector often mistakes mica for gold. Mica may be detected in several ways. Though it may look like gold in certain positions, if that position be changed there will be a change in the color, while gold itself looks the same in every position. Gold will beat out thin and soft under the hammer like lead, while mica breaks up in fine particles of a white floury-looking substance. In panning a sample the gold will remain and the mica float away.

Gold will dissolve in a solution of aqua regia, made of three parts hydrochloric acid and one part nitric acid. If you add some sulphate of iron you will get a very decided precipitate of metallic gold. It is best to add a little water after the gold is dissolved, then a little hydrochloric acid, and then the sulphate of iron. The gold is then placed in a crucible or ladle and heated, and a yellow bead of pure gold obtained.

Another simple test for gold is to add to the dissolved gold some crystals of chloride of tin, when you will get a purple color, known to chemists as the purple of Cassius.

Fissure veins, in which permanent gold mines may be expected, are usually ascribed to volcanic action. They are sometimes called leads, and sometimes lodes. These veins may contain quartz, fluorspar, heavy spar or baryta, calcite and dolomite, associated with the precious metals. It has been ascertained that it is among the silicious rocks, such as granite, that mineralized quartz is most frequently found. When a vein is broken or dislocated it is said by miners to be "faulted." The gangue is the worthless matter of the lead.

Quartz containing gold is generally of a rusty color, though some very valuable gold leads are pure white and show evidence to the naked eye of the treasure they contain. Sometimes this

rusty gold is very difficult to save, escaping all attempts at amalgamating it with quicksilver, owing probably to a thin film of iron oxide coating it and preventing contact with the mercury.

The tenderfoot prospector is often deceived by substances resembling gold. Iron pyrites bear a strong likeness to the precious metal, especially when in the form of small cubes or dice embedded in a quartz gangue. Copper pyrites and yellow mica also simulate to the inexperienced the metal of which they are in search.

THE CLIMATE.

MUCH misconception as to the climate of the gold fields has arisen from the fact that for a long time the only records available were those of the United States Government officers stationed at Sitka, St. Michael's Island, the Seal Islands, or at Point Barrow within the Arctic circle. Meteorological records from these points give about as accurate a conception of the climate at Dawson City as would a report of the weather from Philadelphia of the climatic conditions of Helena, Montana.

The contingent of Northwest Mounted Police which left for the Yukon in 1895 was supplied with accurate thermometers by the Toronto Meteorological Service. The observations were commenced at Fort Constantine in November, 1895, by Staff Sergeant Hayne, who has furnished returns up to the close of May, 1897.

In the autumn of 1895 the temperature first touched zero on November 10, and the last zero recorded in the spring was on April 29. Between December 19 and February 6, it never rose above

zero. The lowest actual reading, minus five degrees, occurred on January 27, and on twenty-four days during the winter the temperature was below minus 50. On March 12 it first rose above the freezing point, but no continuous mild weather occurred until May 4, after which date the temperature during the balance of the month frequently rose above 60 degrees. The Yukon River froze up on October 28, and broke up on May 17. Forty-Mile River broke up on May 11.

In June the temperature reached 70 degrees on twelve days, and on only one day, the 30th, did it reach 80 degrees. The last frost was recorded on the 7th; the average temperature of the month was 53 degrees, which is three degrees lower than the normal June temperature on Lake Athabasca, and nearly the same as the May normal in Winnipeg.

The average temperature for July was 57 degrees; the highest, 82 degrees, was reached on the 1st, and the lowest, 35.5 degrees, on the 27th. Rain fell on eleven days and the amount was 1.71 inches.

In August the highest temperature was 76 degrees, and no frost occurred until the 31st, when the thermometer fell to 29 degrees. Rain fell on 11 days.

The average for September was only 43 degrees, which is three degrees lower than the usual October average in Toronto; rain fell on 12 days.

It may be said that the winter set in on September 27, and on September 30 the temperature fell to 6 degrees above zero. Zero was first touched on October 5, and the average temperature of that month was 27 degrees, or about the same as the December average in Toronto.

November was very cold, the average of the month being 7 degrees; the lowest reading registered was minus 39 degrees. The Yukon froze up on the 5th.

December average was minus 13; the temperature fell to 35 degrees on eight occasions, and minus 40 degrees was the lowest registered.

January was not as cold as in the previous year, the average temperature being but minus 15 degrees, as against minus 38 degrees in the previous year; forty degrees below zero or lower was recorded on five days, the lowest reading being minus 48 degrees.

February was also mild compared with the previous year, the mean temperature being plus 3 degrees, and the lowest temperature registered minus 31 degrees.

The average temperature in March was 1 degree, or 8 degrees lower than the previous March, and on two consecutive days, the 16th and 17th, the two lowest temperature of the winter were registered, namely minus 54, and minus 53 degrees.

In April the days were mostly mild and the nights cold. The lowest reading was minus 5 degrees, which was the last zero temperature of the winter.

The month of May, 1897, was very similar to the preceding May; the average temperature was 40 degrees; 60 degrees was first recorded on the 26th, and 75 degrees on the 31st; the lowest of the month was 11 degrees, on the 9th. Forty-Mile Creek broke up on the 13th, and the Yukon on the 15th.

Owing to the unusual interest excited by the discovery of gold in the Klondike region, Willis L. Moore, Chief of the Weather Bureau, at Washington, D.C., has prepared, at the direction of Secretary of Agriculture Wilson, a special bulletin describing at length and in a most interesting way the weather conditions of Alaska at all seasons of the year. With regard to "temperate Alaska," by which is meant the fringe of islands between the mainland and the sea, and the strip of mainland running along the coast to the western extremity of the Territory, and about twenty miles back from the sea, the report says the temperature rarely falls to zero. Winter does not set in until December 1, and snow disappears, except on the mountains, by May 1. The average temperature of July, the warmest month of summer, rarely reaches 55 degrees,

and the highest does not exceed 75 degrees. The mean winter temperature of Sitka is 32.5 degrees, or a little less than at Washington, D.C. The report then continues:

"The rainfall of temperate Alaska is notorious the world over, not only as regards the quantity that falls, but also as to the manner of its falling, viz., in long and incessant rains and drizzles. Clouds and fog naturally abound, there being on an average but fifty-six clear days in the year. Alaska is a land of striking contrasts, in climate as well as in topography. When the sun shines the atmosphere is remarkably clear, the scenic effects are magnificent, and nature seems to be in holiday attire, but the scene may change very quickly. The sky becomes overcast, the winds increase in force, rain begins to fall, the evergreens sigh ominously, and utter desolation and loneliness prevail.

"North of the Aleutian Islands the coast climate becomes more rigorous in winter, but in summer the difference is much less marked. Thus at St. Michael, a short distance north of the mouth of the Yukon, the mean summer temperature is 50 degrees, but four degrees cooler than Sitka. The mean summer temperature of Point Barrow, the most northerly point in the United States, is 36.6 degrees, but four-tenths of a degree less than the temperature of the air flowing across

the summit of Pike's Peak, Colorado. The rainfall of the coast region north of the Yukon delta is small, diminishing to less than ten inches within the Arctic circle.

"The climate of the interior, including in that designation practically all of the country except a narrow fringe of coastal margin and the territory before referred to as temperate Alaska, is one of extreme rigor in winter, with a brief but relatively hot summer, especially when the sky is free from clouds. In the Klondike region in midwinter the sun rises from 9:30 to 10 A.M., and sets from 2 to 3 P.M., the total length of daylight being about four hours. Remembering that the sun rises but a few degrees above the horizon, and that it is wholly obscured on a great many days, the character of the winter months may easily be imagined."

The statement of Professor Moore includes a series of six months' observations by the United States Coast and Geodetic Survey on the Yukon not far from the region of the present gold discoveries. These observations, which, of course, are absolutely reliable, show that the mean temperature from October, 1889, to April 1890, both inclusive, were as follows:

"October, 33 degrees above zero; November, 8 degrees above; December, 11 degrees below zero; January, 17 degrees below; February, 15 degrees

below; March, 6 degrees above zero; April, 20 degrees above. The daily mean temperature fell and remained below the freezing point (32 degrees) from November 4, 1889, to April 21, 1890, thus giving 168 days as the length of the closed season, 1889-90, assuming that outdoor operations are controlled by temperature only.

"The lowest temperatures registered during the winter were: 32 degrees below in November; 47 degrees below in December; 59 degrees below in January; 55 degrees below in February; 45 degrees below in March; 26 degrees below in April."

The report concludes as follows: "In the interior of Alaska the winter sets in as early as September, when snowstorms may be expected in the mountains and passes. Traveling during one of these storms is impossible, and the traveler who is overtaken by one of them is indeed fortunate if he escapes with his life. Snowstorms of great severity may occur in any month from September to May, inclusive. The changes of temperature from winter to summer are rapid, owing to the great increase in the length of the day. In May the sun rises about 3 A.M. and sets about 9 P.M. In June it rises about 1:30 in the morning and sets at 10:30, giving about twenty hours of daylight, and diffuse twilight the remainder of the time. The mean summer temperature of the interior doubtless ranges between

60 degrees and 70 degrees, according to elevation, being highest in the middle and lower Yukon valleys."

Joseph Desroches went to the Yukon country last July and made the trip overland to the Klondike in less than three weeks from Juneau. He has made money, though the amount he keeps to himself. "When the wind blows through the Chilkoot Pass," he said, "no human being can stand against it. The velocity is such that a man cannot breathe. That is really the most dangerous portion of the trip. I don't consider the White Horse Rapids a dangerous feature, for a man does not need to go through them. I spent two winters in the Yukon district, and came down the river this summer. Navigation on all the rivers in Alaska closes the 15th of September, and opens the 1st of June. During that time the fall of snow is beyond all conception of the people of this locality, and the winds are simply awful. Everything is frozen solid, and what little level ground there is, is one solid mass of ice; the earth is frozen to a depth of fourteen feet, and no movement can be made except on snow shoes or snow sleds.

"During the summer time the climate is delightful and the days are very long. In July a person can read at night very plainly. The light in winter is from 9 until 3, and the cold

continuously worse than the bitterest days we have here; in fact, the temperature here in winter gives one the very poorest idea of Alaskan cold. It is practically impossible to do any prospecting, although in many cases men have built fires upon the frozen ground, after digging off many feet of snow, and so melted about five inches. This would be dug up and thrown on the snow, and the same process kept up. When the warm weather would come this dirt would be run through the sluices."

Angus Galbraith, though he has made his stake there, says he would advise no one to go up into the country. He is a man of 70 years of age, and has been in Alaska three years, and when asked if the work was hard said he had been able to stand it, but that it was no place for an old man.

"The winters," he said, in the course of the interview, "are very cold, the mercury going down as low as 75 degrees below zero. The coldest weather last winter was in January and February. Miners have to use the greatest care not to work themselves into a perspiration, as the moisture would freeze and result in frostbite.

"In summer it gets quite warm and some vegetables are raised, though, as the miners are so busy hunting for gold, little time is given to putting in gardens. When my party left it was

93 degrees in the shade. Mosquitoes are so numerous that gloves have to be worn while working."

Here is an extract from Assistant Surgeon A. E. Willis' of Northwest Mounted Police report for 1895:

"It may be of interest to mention something concerning the climate, mode of living of the people generally, and diseases met with. The climate is wet. The rainfall last summer was heavy. Although there is almost a continuous sun in summer time, evaporation is very slow owing to the thick moss which will not conduct the heat, in consequence the ground is always swampy. It is only after several years of draining that the ground will become sufficiently dry to allow the frost to go out, and then only a few feet. During the winter months the cold is intense, with usually considerable wind. A heavy mist rising from open places in the river settles down in the valley in calm extreme weather. This dampness causes the cold to be felt very acutely and is conducive to rheumatic pains, colds etc. Miners are a very mixed class of people. They represent many nationalities and come from all climates. Their lives are certainly not enviable. The regulation 'miner's cabin' is twelve feet by fourteen feet with walls six feet and gables eight feet in height. The roof is heavily earthed and

the cabin is generally warm. Two and sometimes there or four men will occupy a house of this size. The ventilation is usually bad. Those miners who do not work their claims during the winter confine themselves in these small huts most of the time. Very often they become indolent and careless, only eating those things which are most easily cooked or prepared. During the busy time in summer when they are 'shoveling in,' they work harder and for long hours, sparing little time for eating and much less for cooking."

The following passages have been culled from a budget of interviews:

"Dawson City is not a paradise by any means, but there are much worse places. In winter the cold is intense, but as there is plenty of timber around we do not suffer to any great extent. Our summer lasts about six weeks, but during that time it is very warm. The day we left it was 93 in the shade. The mosquito is our worst enemy."

"On the upper Yukon the climate is dry, with little rain, but at Forty-Mile there is almost as much rain as in North Dakota and Montana. Up in the mountains this rain turns to snow, which intereferes with the diggings sometimes even in midsummer. Singular to say, the country is infested with millions upon millions

of mosquitoes in the summer, and a man's life is in danger if his face and body are not properly protected. It is said that not one-third of the men that go to the region in the summer remain over winter, as the mosquitoes run them out.

"In summer there is almost two months of continuous daylight.

"These Klondike Creek facts are mighty interesting and alluring. No doubt they will attract many more men to the diggings there next spring. But men who are planning to go in there want to consider the hardships before they start. It is no country for a tenderfoot or a quitter. One man, who started on January 3 from Forty-Mile Post to go to the Klondike Creek diggings, arrived there on February 27. He had to sled his outfit the whole way, and in several places had to divide his load and double. The thermometer ranged from 42 to 77 degrees below zero, and he was kept ten days in camp at one place by the cold. Gold got by such work is hard earned.

"But there is another side to the picture. The bitter must be mixed with the sweet. Winter lasts nine months in Klondike, and its average temperature is 68 degrees below zero, but its snow is light and frosty. Summer reigns during the remaining three months and in them the weather is warm and sultry, and the mos-

quitoes frisk and frolic about in millions. They are in the water one drinks, and, like the gad-fly in 'Prometheus Bound,' give man rest neither day nor night. Then again it must be remembered that, although it is easy to get to Klondike at this time of the year, it is impossible to get away from there later on in the season. After the middle of September both the Juneau and St. Michael routes are closed; and all who are in Klondike must stay there until the following summer.

"The early summer is the time to reach Alaska, say about the last of May or the beginning of June, when the placer mining is open and the broken ice in the rivers has rendered valuable assistance in loosening the gravel that contains the metal.

"The rigors of the climate in the gold regions have been exaggerated. I have been in Montana, and I can say truthfully that the Klondike winter is not more severe. The honesty of the prospectors is surprising. Locks and keys are unknown in the region, and the latchstring is always on the outside. On the whole, the prospector is as safe as if he were in Pennsylvania.

"The country is healthy, the climate warm during the summer and the days long and quite dry; during the winter the days are short and very cold.

"The weather in Alaska is pleasant in the summer," said Inspector Constantine of the Northwest Mounted Police, in the course of an interview, "but in the winter one suffers from the cold very much. It rains every day up there, and if it should happen to miss a day it always makes up for the loss the next day. I never heard it thunder while I was there. All the miners who do not work in a placer mine have to stop work during the winter on account of both darkness and the weather. Alaska is dark for quite awhile during the winter, and of course a person cannot work in a mine that is not under the ground. A mine under the ground is dark all the time and therefore requires an artificial light, and for that reason it makes no difference whether it is night or day, wet, dry, hot or cold. It would be bad policy for an unhealthy person to go to that country, as he would have to go with wet feet all the time and sleep in wet clothes at night."

"How about the food?"

"Oh, the food that one has to endure is not of the best. It consists mainly of slap-jacks, fat meat, and beans all the year round. Now and then a person gets in a district where there is plenty of game, such as bear, fish, ptarmigan and deer. Any one expecting to go there for a good time will be badly disappointed. Of course, I believe there is gold there and plenty of it."

Mr. Rouilliard, a returned French-Canadian, does not think there is any necessity for suffering from cold in Alaska. He says Alaska is a good, healthy, climate, and there will be more trouble from getting sufficient supplies of food than danger of freezing. He says it is not true that the work will have to be suspended from September to May on account of the cold weather. During that time surface mining will have to be suspended, but underground work can be carried on as well as at any time.

To a reporter, Inspector Strickland spoke at length of the country that is causing such a sensation. Regarding the best route to reach the country, he said that he would advise a poor man to go by Dyea and the Chilkoot Pass. He would not advise any one to start later than August 1, as no one would have time to pack the amount of provisions that he would need over the summit. Before he could do it the river would be frozen up. Last year it froze by the first of October, but it does not generally freeze until the middle of October. It is hard to get into the country, and any one who goes there must be prepared to go through some rough experiences. There is plenty of gold, but it is not lying around waiting for any one to pick it up. It is gotten only by hard work.

Mrs. Gage, late of Dawson City, says:

"I am almost sure I shall return to the Yukon Valley to spend the winter. The last boat sails from Seattle, August 28. The only thing to keep me is that I can't take my baby on account of the cold. As for myself, I am not afraid, for it is such a dry cold that one hardly feels it. Women are always safe in the Yukon. Although beer and wine are sold the men are rarely disorderly." Mrs. Gage is young and not of large stature. She says her health was never better than when in Alaska.

"It is wrong for any one to attempt a trip to the gold country in winter. The trip is a bad enough one in other seasons, but it is practically impossible during the winter. I only know of three or four persons who have attempted the journey in winter and were successful.

"In summer it takes about thirty days to reach the Klondike. From the coast to the summit of Chilkoot Pass is very severe traveling, and even after that is passed, difficult and dangerous work is still in store for the traveler. The best time to go is in the spring, starting about March 1; but travelers must be careful to take in sufficient provisions to last a year."

The Yukon last year was frozen hard and fast on September 28. The Alaska Commercial Company never contracts to carry any one through who leaves Seattle after July 30. The first ice

that forms goes out, filling the river with floating cakes that are dangerous to craft stemming the current. Later the river freezes over solid to its mouth. The condition of a party, ice-bound, hundreds of miles from home, and unable to traverse the rough country to reach its destination, would not be pleasant, but the extreme cold of the North is not unbearable. Experienced men travel thousands of miles in the dead of winter by dog train and on snowshoes, and keep their health. Zero weather on the coast is harder to endure than 40 degrees below inland, provided the air be calm.

There is, of course, a great difference between the climate on the seaboard and that 2,000 miles up the river, but as many will winter on the shores of Behring Sea this year, so as to be ready to start up with the opening of navigation, the following taken from the official records of the United States Government Weather Reports are of interest. The extracts are from the report of the government weather observer who was stationed at St. Michael's Island for years. This island is on the coast of Alaska, just north of the mouth of the Yukon River, and the weather there is warmer than it is in the interior, where the gold fields are, because it is heated by the sea currents.

The report states that the average tempera-

ture for four consecutive years was six degrees below zero. There are two well-marked seasons—the winter of seven months, from October to May, and the short summer. In winter occurs by far the best weather, because of the long periods of beautiful clear days, which are welcomed in spite of the intense cold. The summer is disagreeable on account of the large number of cold, misty rains and low-hanging cloud banks that shut down over the earth like a leaden cap.

In winter darkness comes between three and four o'clock in the afternoon. Northerly winds prevail. There are many fierce gales in winter, filling the air with blinding clouds of snow, and at a temperature that is frequently 24 degrees below zero. The lowest average temperature in winter is 20 to 24 degrees below zero. The highest average temperature for summer is 35 to 54 degrees above zero. Before the fierce gales of winter even the hardy fur traders shrink in dread, and frostbites are the common results of facing the icy blasts. Numbers of natives perish in these storms. On July 28, 1878, a foot of snow fell on all the hills and mountains along the Alaskan coast, down to within 250 feet of the sea beach. There was another snowfall June 17 and 18, 1880.

This government report tells of the discouraging attempts of the weather observers to raise

garden vegetables. They were stunted by the cold, and only the most hardy kinds would grow at all.

William B. Moore, now a resident of Spokane, Washington, says:

"I would not advise any one to attempt the trip later than the 15th of August. It is a hard country to prospect. The Indians make no trails. During the winter they trap for fur, and in the summer they live on the river, and fish and kill fowl. There are large areas of tundra lands which are very tiresome to traverse. Gold, however, is found right in these tundra marshes.

"The chief hardship is the long, tedious, dark winter. In midwinter the sun does not rise above the horizon, and you have only an hour and a half to two hours of twilight. In summer the mosquitoes, gnats and flies come in clouds. The sunshine is almost perpetual, and the summer growth is tropical. In the canyons the temperature frequently rises to more than 100 in the shade, and remains there for days. The growth of all kinds of vegetation at this season is prodigious. The thimbleberry stalk is much larger than in this country, and the leaves are the size of a palm-leaf fan. The vine cranberry is very abundant, and the fruit is similar to the cultivated cranberry. The forests are very similar to the woods of the Northern States, and firewood is generally to be had in abundance."

THE OUTFIT.

OPINIONS as to the correct thing in outfits vary, and several such are given, that the prospective Yukoner may choose for himself. A Juneau correspondent writes: Everybody who plans to go to the Yukon next spring should either bring a complete outfit with him or the cash to buy it here. He has got to take supplies for the trip with him over the pass, whichever trail he takes, and he might as well pack the year's outfit along. He will save money by doing it.

This is a pretty comfortable and complete outfit and might be cut down a little in some of the lighter supplies, but not much. A prospector will find use for all of it if he has it. The cost of drygoods and clothing is from 75 to 125 per cent. more at Forty-Mile than here in Juneau, where it is not much more than down below.

A prospector's supply for one year in the Yukon country should consist of about the things named in this table, which gives Juneau prices compared with the prices at Forty-Mile:

ARTICLES.	Number of Pounds.	Juneau Prices—Cts.	Forty-Mile Prices.	Total Cost, Juneau.	Total Cost, Forty-Mile.
Flour.....	450	2	\$.08	\$9.00	\$36.00
Sugar, D. G.....	75	5½	.20	4.12	15.00
Bacon, side.....	75	10	.35	7.50	26.25
Bacon, breakfast.....	25	13	.50	3.20	12.50
Beans.....	75	3½	.10	2.62	7.50
Dried apples.....	25	10	.20	2.50	5.00
Dried peaches.....	25	10	.30	2.50	7.50
Dried apricots.....	25	10	.30	2.50	7.50
Dried prunes.....	25	10	.30	2.50	7.50
Raisins.....	20	10	.25	2.00	5.00
Split peas.....	25	8	.15	2.00	3.75
Coffee, ground.....	10	25	.40	2.50	4.00
Coffee, green.....	5	30	.50	1.50	2.50
Tea, common.....	10	35	.75	3.50	7.50
Baking powder.....	12	50	1.00	6.00	12.00
Condensed milk, ½ case.....	30	....	....	8.87	10.00
Corned beef, 1 case.....	28	....	....	2.75	6.00
Cornmeal.....	10	8½	.15	.35	1.50
Rolled oats.....	10	5	.15	.50	1.50
Oatmeal.....	10	5	.15	.50	1.50
Rice.....	35	7½	.15	2.65	5.25
Evaporated potatoes.....	10	25	.40	2.50	4.00
Evaporated onions.....	5	50	1.00	2.50	5.00
Black pepper, ground.....	2	50	1.00	1.00	2.00
Salt.....	15	1½	.10	.87	1.50
Mustard, ground.....	1	40	1.00	.40	1.00
Allspice, ground.....	½	25	.50	.25	.50
Cinnamon, ground.....	½	50	.75	.50	.75
Sage.....	½	35	.50	.35	.50
Butter, roll.....	15	40	1.00	6.00	15.00
Camp stove.....	35	....	....	5.50	15.00
Gum boots, C. P.....	8	....	....	6.50	12.00
Gum boots, canvas.....	6	....	....	5.50	10.00
Sleigh.....	20	....	....	8.00	16.00
Totals.....	1,132	....	....	\$107.70	\$280.50

Miners who go in with outfits from here usually employ Indians to pack their supplies over the pass. This costs from \$12 to \$14 a hundred over the Dyea route, and the distance is about twenty-seven miles. After that the miners must drag their own stuff. The best time to go in is before the snow melts, which it does about the middle of April usually. After the summit is passed, if the trip is made before the snow goes off, it often happens that great distances can be made by rigging sails on the sleds. It takes a little more than thirty days to get from Juneau to Forty-Mile, but a man wants to know how to handle a boat before he tries to go down the rivers alone after the ice goes out. The current is swift and there are lots of rocks and dangerous passages.

The following are necessary articles of a woman's outfit: One medicine case filled on the advice of a good physician; two pairs of extra heavy all-wool blankets; one small pillow; one fur robe; one warm shawl; one fur coat, easy fitting; three warm woolen dresses, with comfortable bodices and skirts knee length—flannel-lined preferable; three pairs of knickers or bloomers to match the dresses; three suits of heavy all-wool underwear; three warm flannel night-dresses; four pairs of knitted woolen stockings; one pair of rubber boots; three gingham

aprons that reach from neck to knees; small roll of flannel for insoles, wrapping the feet and bandages; a sewing kit; such toilet articles as are absolutely necessary, including some skin unguent to protect the face from the icy cold; two light blouses or shirt waists for summer wear; one oilskin blanket to wrap her effects in; one fur cap; two pairs of fur gloves; two pairs of fur seal moccasins; two pairs of mukluks—wet weather moccasins.

She wears what she pleases *en route* to Juneau or St. Michael, and when she makes her start for the diggings she lays aside her civilized traveling garb, including shoes and stays, until she comes out. Instead of carrying the fur robe, fur coat and rubber boots along, she can get them on entering Alaska, but the experienced ones say take them along. The natives make a fur coat with hood attached called a "parki," but it is clumsy for a white woman to wear who has been accustomed to fitted garments. Leggings and shoes are not so safe nor desirable as the moccasins. A trunk is not the thing to transport baggage in. It is much better in a pack, with the oilskin cover well tied on.

The things to add that are useful but not absolutely necessary are choice tea, coffee, cocoa, and the smaller, lighter luxuries of civilization that purse permits and appetite craves. It costs

just as much for portage on reading matter as for the necessities of life, and consequently after making out a list of what you'd like to have, it is wise to cut it down to what you can't possibly struggle along without.

It's astonishing how little people can comfortably get along with when they try.

From almost every town within a radius of 200 miles, horses and large dogs are being hurried to Tacoma and Seattle for shipment to Alaska. Cayuses that could not be sold for \$6 and \$8 each are now worth \$20 to \$30. Good draft horses are too valuable to ship, and would not be as good for packing outfits up the Chilkoot and White Passes from Dyea and Skagaway as the nimble and wiry ponies. Packers now get 25 cents a pound for carrying outfits from Dyea fourteen miles to Sheep Camp. The last two miles to the summit is so steep that horses can only get over light and the goods are carried the balance of the way by Indians, who are now charging fabulous prices from Sheep Camp to Lake Lindermann.

The freight on horses to Dyea is \$22.50 each, and their owners must also pay \$11 a ton on enough feed to last while they remain. On the approach of cold weather many horses will be taken over to Lake Bennett, killed and frozen and sold for dog meat. In March another big

army of horses will go north to pack for the 10,000 prospectors who are expected to march over the passes in March, April and May.

The current price of good dogs runs from \$25 to \$125. Old Yukoners will not take Puget Sound dogs, claiming that they are so thin-haired that the arctic winter will kill them. Some hardy dogs from Montana and Dakota are being taken in, but even they take a back seat to the Yukon canines, which are said to be a cross between the Esquimo dog and the timber wolf. It costs \$5 to take a dog to Dyea.

The greatest demand for any particular thing is for boats. People, to save time in getting down the river, should take their boats with them. A half-dozen carpenters and planing mill establishments have caught the idea, and are working on the Pacific Coast night and day turning out knockdown boats. One that will carry a ton costs \$18, and weighs about 200 pounds. It is taken apart with no pieces more than six or seven feet long, and packed for shipping. The demand is so good for these boats that the builders are several days behind with their orders. The principal objection to them is that the Indians and packers dislike to contract to carry them over the mountains on account of their awkward shape. One builder has now worked out a model for a galvanized iron

boat that can be carried in sections fitting together like a "nest" of custard dishes, and can be put together with small bolts. As a suggestion to those going from the East, a canvas folding boat that will carry two tons and is constructed on good lines would be very available for the Yukon. A keel, mast, and some additional bracing could be added after reaching the interior.

According to one returned miner the following would make a good outfit: Bacon, 200 pounds; flour, 800 pounds; assorted dried fruits, 150 pounds; cornmeal, 200 pounds; rice, 50 pounds; coffee, parched, 75 pounds; tea, 40 pounds; sugar, 75 pounds; beans, 150 pounds; condensed milk, 1 case; assortment of evaporated vegetables and meats; 2 suits of corduroy; 3 pairs rubber boots; 3 pairs heavy shoes; 2 dozen heavy woolen socks; 1-2 dozen woolen mitts; 3 pairs woolen gloves; 3 suits of heavy underwear; 2 hats; 2 suits of mackinaw; 4 heavy woolen shirts; 1 heavy coat; 3 pairs of heavy woolen blankets.

This outfit will cost about \$175. Transportation via steamer, to Klondike costs \$150, or via Juneau and Dyea \$40. If by the latter route, the carriage from salt water to Lake Lindermann must be added; also, boat at Lake Lindermann, \$50; miscellaneous \$25. Conservatively, this is a fair estimate of the requirements of a man who ex-

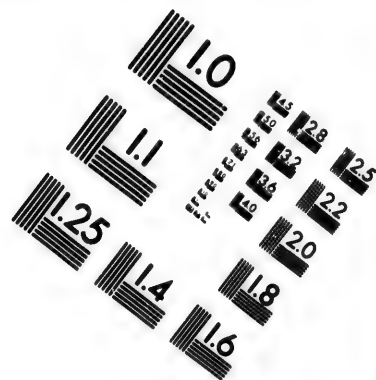
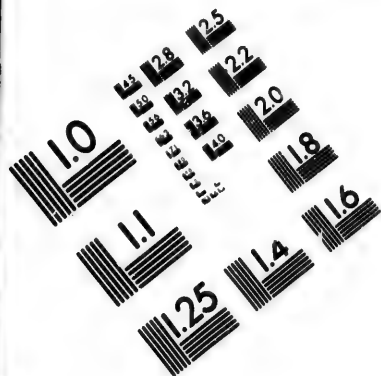
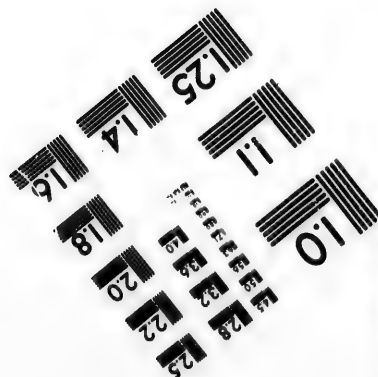
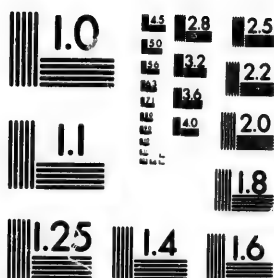


IMAGE EVALUATION TEST TARGET (MT-3)





pects to remain in the Yukon for 18 months. There are several incidental expenses which might be incurred, or the amount of supplies might be curtailed to a slight extent.

One of the most modest calculations of an old hand who would "travel light," reads thus:

"I would pack but very little if I had no money to pay my way. Here is what I would take, and it will be found amply sufficient: Twenty pounds of British ship's biscuit, which may be secured at any first class grocery; 6 pounds of sugar in good strong cotton bags of three pounds each, for they can be better packed in a bundle; 2 pounds of coffee and 2 pounds of tea; a dozen tin boxes of wax matches; a bar of soap; a tin pail to boil tea or coffee in, and to use the lid for drinking out of; one tin of salt and pepper; 1 ax; 2 pairs of heavy blue woolen blankets; two pairs of heavy miners' boots; 2 suits of heavy underwear; a suit of strong oilskin, such as sailors wear; strong heavy socks and gloves; a pair of smoked glasses; a good heavy revolver; 2 towels; a tent 10 by 8 ft.; 1 pick and shovel, and if possible, a heavy india-rubber sleeping bag. There's the whole of my kit.

"The rope you would use in binding the outfit would serve also for carrying it over your shoulders, and on arrival at destination be used

in erecting your tent. The idea of carrying, or rather packing flour, bacon, cornmeal, rice, oatmeal, and other such luxuries, as well as numerous culinary utensils, building tools and superfluous clothing, is all nonsense.

"The journey to the frozen North is not nearly so hard as some people imagine, but for all that I would not advise an unpractical man to go there until next spring. A seasoned miner can go there at any time, but the green hand will find it a holy terror before he has tramped the first fifty miles."

There is a strong probability that there will be a short allowance of provisions in the Yukon the coming winter, even if there is no actual suffering from the want of food, and every one going in will do well to take sufficient supplies to last until next summer, says the Juneau, Alaska, *Searchlight*. Fully 2,500 people have gone in this year over the Chilkoot Pass, and 200 or 300 will go up the river on steamers. To say there are 5,000 people now in the Yukon Valley is a conservative estimate, and if all these decide to winter there it is doubtful if the trading companies can get in provisions enough to last through the winter. If it is clearly seen that there will be a shortage the miners will have to take matters in hand and make all those not having a winter outfit go down the river. There

is no higher law than necessity, and it is better that some should leave the country, however unwillingly they may go, than that all should suffer from hunger. The companies will do their best to supply the increased demand made upon them, and if the river should not freeze up until late they may be able to get up an abundance of supplies for every one, but those going in have to take chances unless they take a good outfit with them. Some have the gold fever so badly that they are willing to run any risks; to take the most desperate chances. They start with barely enough supplies to reach Klondike, and no money to buy more, even if there is plenty to be had on their arrival. They expect to go to work at once for wages, but possibly before they can earn enough to buy a winter's outfit everything will be sold to those who have cash. Some whose means are very limited are trying to make every dollar buy as much of life-sustaining food as possible, and the ingenuity in this direction is something fearful to those who like to indulge their stomachs a little. Here is a list of supplies which one John Doyle, better known as "Biddy," has figured out will last him eight months:

"Four hundred pounds of pilot bread, \$8; 50 pounds of salt pork, \$4; 2 gallons of molasses, \$1; 2 gallons of vinegar, 50 cents; 100 pounds of split peas, \$5; 20 pounds of salt, 20 cents; 1 pair

of gum boots, \$6.50; 1 pair of shoes, \$4.50; total \$29.70. His old clothes are good enough, he thinks, and he has blankets. Tent and stove he says he can get along without; he can broil his pork over a camp fire, and one small kettle to cook his peas will be all the cooking utensils he will need." To prevent scurvy boiled moss will be sufficient, besides proving nourishing. That this kind of diet would sustain life is certain, but how many would be willing to put up with it? We would advise none to try it.

Life in the Yukon, even when viewed at its best, presents hardships enough, the winter's fearful cold, the summer's pest of mosquitoes, the long, weary tramps, the hard work—these are enough, even with the best provisions, warm blankets, comfortable houses, good fires and something to give light during the long winter nights. It is impossible to emphasize too strongly the necessity of every one's taking an abundance of the best food to last him until another summer, and a good camp outfit. If you can't get these things it is safer to wait until you can save up enough to buy them.

The following itemized bill sold recently by a Chicago house furnishes the best idea of the make-up of a comparatively cheap outfit, although every article composing it is of first-class quality:

"Three suits of heavy woolen underwear at

\$4.50, \$13.50; 4 pairs heavy stockings, at 40 cents, \$1.60; 2 pairs German stockings, at \$1.15, \$2.30; 1 pair hunting stockings, \$1.25; 1 heavy sweater, \$4.50; 1 lighter sweater, \$2.35; 1 leather, fur-lined coat, short, \$7; 1 pair jeans trousers, lined with flannel, \$3; 1 mackinaw coat, \$3; 1 pair mackinaw trousers, \$2.50; 1 suit buckskin underwear, \$12; 1 pair hip rubber boots, \$5.25; 1 pair heavy miner's boots, \$5; 1 pair heavy overshoes, \$2.10; 4 blankets at \$2.40, \$9.60; 1 pair leather-lined mitts, \$1.20, 1 pair woolen mitts, \$1; 1 sleeping bag, \$12.50; 1 sleeping cap, 75 cents; 4 canvas carrying bags, \$2; tools, including two miner's pans, picks, shovels, axes, saw, file, knife, \$7.33; total, \$99.72."

This is one of the cheapest of the outfits, and does not include firearms and numerous other things found in most of the bills. One of the common purchases is a horsehide suit, costing \$17. Many also buy a long coonskin coat, costing \$32. Another important item not included is that of provisions, some men taking \$40 to \$50 worth, composed for the greater part of two-ounce bottles of beef extract, canned soups, etc., and tea and coffee. With this usually goes a small cooking outfit, costing \$5.50. The principal purpose in taking these things is for emergencies when other provisions are not available.

The supplies taken in by one experienced miner were as follows:

"Seventy-five pounds granulated sugar, \$4.13; 1 dozen packages beef extract, \$4.75; 10 pounds evaporated onions, \$5; 50 pounds evaporated potatoes, \$9.50; 50 pounds evaporated peaches, \$1.75; 10 pounds evaporated currants, 70 cents; 25 pounds salt, 25 cents; 25 pounds rolled oats, 63 cents; 50 pounds cornmeal, \$1; 200 pounds breakfast bacon, \$22; 50 pounds rice, \$2.50; 1 pound cayenne pepper, 35 cents; 1 pound black pepper, 25 cents; 1 case condensed milk, \$7; 10 sacks flour, \$10; 1 bottle vinegar, 50 cents; 15 pounds dried beef, \$2.70; 1 case baking powder, \$5; 1 pound mustard, 25 cents; 1 box candles, \$1.50; 1 can matches, 75 cents; 20 bars soap, 75 cents; crackers, \$5.50; castile soap, 25 cents; 1 dozen small cheeses, \$1; 25 pounds spaghetti, \$2.75; 15 pounds coffee, \$3.75; 3 pounds tea, \$1.20; 100 pounds beans, \$2; 25 pounds pitted plums, \$1.75; total cost of provisions at Seattle, \$102.83."

This man believed that these supplies will last him for twelve months.

Some gleanings that, though like the words of a dictionary, rather disjointed, nevertheless contain valuable hints, are appended:

"The Siwash dogs, which we used in drawing loads of provisions, resemble very much a Scotch collie, and are very lean, lank and wolfish-looking. They are, nevertheless, very strong, and gifted with wonderful endurance.

"A Seattle firm is preparing for the shipment of a large amount of flour into the country. The flour has to be prepared to make the long and hard trip. The flour goes in quarter barrels of fifty-pound sacks, two of which are sewed together in burlaps for protection. Most of the flour will go into the mining country by way of Juneau and the Chilkoot Pass, but this particular shipment will go by the steamer *Excelsior* to St. Michael.

"Both of us were afraid of the ice, though I had been raised among it in Siberia. We did not suffer from the cold a great deal, however. Furs may be good when you are traveling, but when you are prospecting the great soft blanket is the thing you want. Everything necessary for equipment can be got at Juneau or Dawson City. I am fully convinced that \$500 will fit a man out in all he wants. He can spend \$250 in Juneau and take the balance for ammunition and provisions.

"We arrived in this beautiful city (Dawson) consisting of tents and shacks, the first day of June about three o'clock. We found everybody out of grub, sold some bacon for \$1 a pound, butter \$2 per pound; could have sold all the provisions we had at the same rates, but only let a little go. However, the boat came in to-day with a large amount of supplies, so food will be somewhat cheaper. "

"The gaunt and hungry miners come to visit you. They offer you a dollar for a needle and thread. They offer you \$25 for a pair of rubber boots. They are rich—these grizzled and whiskered fellows—but they are ragged and hungry.

"You are not yet through buying. You must have fur gloves. They will cost you \$3. You must have mukluks or mud moccasins, for which you pay \$4. These are made of fur seal, with the fur inside. They come to the knee or all the way up to the thigh, as you may choose. Get snow shoes of the Ingalik pattern for \$10 a pair, and at last you are ready. If you are not an experienced dog driver woe be unto you. All you can do is to trust in Providence and follow the leader. This you prepare to do.

"A Middletown, New York, firm that has been engaged in manufacturing gold dust bags of sheepskin for Californian customers, is working with a double force on account of telegraphic orders received since the Klondike discovery.

"Fancy prices were paid for dogs by those who were able to purchase, and as high as \$175 and even \$200 were paid for good dogs. Almost any kind of a dog was worth \$50 and \$75 each.

"If he should go on without a miner's kit and proper supplies the scarcity of food and the exorbitant prices would take the rest, and he would find himself working for \$15 a day in Klondike and paying \$4 for board.

"A bag company is also at work on an order for 1,600 canvas bags, to be had especially for the carrying of clothing and provisions. They are also securing a large number of tents. The woolen mills at Salem, Oregon City and Albany, Oregon, have all increased their forces to meet the demand for heavy woolen goods.

"The raw turnips and even potatoes were eagerly sought, and as a crate of onions came from the Portland there was almost a riot, so strong was the desire for them. Several of the lucky miners went aboard the Portland and there gave the steward \$30 for a dinner of seven plates. I ate at the same table, though not as their guest, as my dinner was paid for. The men ate like famished wolves, and as the various courses were brought on, laughed like pleased children. Most of the sixty passengers aboard the Weare, which started from winter quarters after the ice melted in the Yukon, had been living on beans, bacon and bread, or hard tack, for from six months to a year; some longer. The little agency store at St. Michael was besieged for bottled cider, canned pineapples, apricots, cherries, or anything tart, and at a dollar a bottle cider went like gumdrops at a Sunday-school picnic."

The matter of clothing must be left to individual taste, needs and means. But the miners



Yukon Miners in Winter Garb.—Page 267.

generally adopt the native costume. The boots, usually made by the coast Indians, are of several varieties. The water-boot is of seal and walrus skin, while the dry weather or winter boot is of all varieties of style and material. The more expensive have fur-trimmed legs, elaborately designed. They cost from \$2 to \$5 a pair. Trousers are often made of Siberian fawn skin, and the skin of the marmot or ground squirrel. The parka, or upper garment, is usually of marmot skins, trimmed with wolverine around the hood and lower edge, the long hair from the sides of the wolverine being used for the hood. This hair is sometimes five or six inches in length and is useful in protecting the face of the wearer. Good, warm flannels can be worn under the parka, and the whole outfit will weigh less than the ordinary clothes worn in a country where the weather gets down to zero. The parka is almost cold proof. But it is expensive, ranging in price from \$25 to \$100. Blankets and fur robes are used for bedding. Lynx skins make the best robes. Good ones cost \$100. But cheaper robes can be made of the skins of bear, mink, red fox, and the arctic hare. The skins of the latter animal make warm socks to be worn with the skin boots.

Prices in Dawson City are fairly representative of the amounts charged for provisions and articles

of wear, on the Yukon, and the following list will give interesting information on this subject. These were the ruling prices when the miners left Dawson City to return with their immense wealth, and entrance their neighbors with the recital of the story of their success:

“Flour, per 100 pounds, \$12; moose ham, per pound, \$1; caribou meat, per pound, 65 cents; beans, per pound, 10 cents; rice, per pound, 25 cents; sugar, per pound, 25 cents; bacon, per pound, 40 cents; butter, per roll, \$1.50, eggs, per dozen, \$1.50 to \$2; salmon, each, \$1, to \$1.50; potatoes, per pound, 25 cents; turnips, per pound, 15 cents; tea, per pound, \$1; coffee, per pound, 50 cents; dried fruits, per pound, 35 cents; canned fruits, 50 cents; canned meats, 75 cents; Lemons, each, 20 cents; Oranges, each, 50 cents; tobacco, per pound, \$1.50; liquors, per drink, 50 cents; shovels, \$2.50; picks, \$5; coal oil, per gallon, \$1; overalls, \$1.50; underwear, per suit, \$5 to \$7.50; shoes, \$5; rubber boots, \$10 to \$15.”

Although most of the Klondikers are returning home with plenty of gold, they all advise and urge people who contemplate going to the Yukon not to think of taking in less than one ton of grub, and plenty of clothes. While it is a poor man's country, yet the hardships and privations to be encountered by inexperienced persons

unused to frontier life are certain to result in much suffering during the winter. They should go prepared with at least a year's supplies.

One old miner recommends: "Get plenty of staples and get the best clothes obtainable." This authority drew attention to the fact that the miner should follow the Shakespearian instruction and put money in his purse. Many small articles will be needed at Dawson City, and if the prospector goes by way of Juneau, there are guides to pay and a sled and dogs to hire. Some of the clothes taken will last longer than a year, but the quantity fit for service at the end of that time will be very limited.

Yet another informant urges: "One should buy these things in Juneau, and he should start out with something like the following:

"Four hundred pounds of flour, 100 pounds of beans, 100 pounds of bacon, 100 pounds of sugar, 10 pounds of tea, 30 pounds of coffee, 150 pounds of mixed fruit, salt, pepper, and cooking utensils. The whole outfit can be purchased, well, within \$90. The cost of conveying this stock of provisions to the headwaters of Lake Lindermann will average about \$15 per hundred, (Now much higher—Ed.), but even that makes it considerably cheaper than the same goods could be purchased in the mining camp. I understand that the Commercial Company has decided to

carry freight for the travelers next season. If this is true, the cost to the prospector will be materially lessened."

The tents recently provided by the United States Quartermaster's Department for the use of the troops ordered to Alaska are well adapted for comfort even in such a cold country as Alaska. The body of the tent is made of 12-ounce army standard duck, and is in the shape of a conical wall tent, 16 feet 5 inches in diameter, with the wall 3 feet high. The special feature of the new tent is the stove and pipe, the two together being so constructed as to form the center pole of the tent. The new arrangement will, it is claimed, keep the temperature at a comfortable point.

Everybody who has been to the Klondike by way of the Juneau route and down the Yukon has something to say of the difficulties encountered in building suitable boats from the small timber available. The trees grow very closely together and do not attain good size. Sometimes it is necessary to go ten or fifteen miles inland before suitable trees are found, and then the logs must be laboriously whipsawed and the lumber carried to the lakeside. Many have concluded that the best solution of the boat-building problem is to have their boats made elsewhere. One builder has five orders from persons going to the Klon-

dike for boats in which to go down the river. One boat in his shop is twenty feet over all, five feet beam, and two feet deep, with double ends and a flat bottom. She is built of seasoned spruce, and the knees are natural crooks. The boat is put together with screws, so that it can be taken apart for transportation and readily put together when the lake and river are reached. Such a boat costs from \$40 to \$60, about one-third what inferior boats would cost on the Yukon, and has a capacity of two tons.

Another boat is described as: "Our boat was built like a John boat, 24 feet long and 5½ feet wide."

A Montana man wrote back to a relative: "In addition to a strong constitution there are many other things to be taken into consideration before venturing upon the trip. One should have a practical knowledge of placer mining, where to look for gold, and once found, how to save it. Theorists may be all right in some countries, but in the Yukon, where the warm season does not average over twelve weeks in the year, experience will be found to be a very expensive teacher. A bookkeeper or a farmer might go to this modern El Dorado and find an extraordinarily valuable claim, but the old-time prospector, who knows colors when he sees them, would stand ninety-nine chances to the former's one of making a rich strike.

"Another essential is a sufficient amount of hard cash in your pocket to carry you over a season in the event of your not being able to locate a good claim the first summer. No one should start for the Yukon country with less than \$200 in cash after he has purchased his outfit. Should you be so fortunate as to find a good claim the first season it is likely that you would not be able to realize from it immediately. Nearly all of the summer claims require drainage before they can be worked, and that is both tedious and expensive. On the winter claims the pay gravel is taken out by drifting and then allowed to lie on the bank until the following summer before the gold can be washed out. The necessity of having sufficient funds to carry you over a season is therefore very apparent. The trading companies operating the stores on the Yukon will not extend credit, as all their goods find a ready sale at spot cash. If you have not the money to buy a winter's outfit in the event of a profitless season, you will have to subsist on a straight diet of flour, providing you are lucky enough to have the flour. Don't go to the Yukon broke or with only a few dollars, or you may have abundant reasons to regret it.

"After having decided to tempt fortune in the Yukon country, the first consideration is your outfit, where to get it and what it should consist

of. Nothing must be taken that is superfluous or it will probably be thrown away before the summit of the mountains is crossed. The outfit should consist only of your bedding, provisions, and tools for mining and boat building. Those who have the money to invest frequently take in a two years' supply of provisions and say it is profitable for them to do so. No one should leave Juneau without at least a six months' supply, and the more you can take the better you will be off when you arrive at your destination. An outfit of fresh provisions will always find a ready sale at high prices at the mines, and there is never any danger of taking in too much. What constitutes an ideal outfit depends much upon one's individual taste, and the length of his purse. For those content with the necessities of life the following may serve as an example of the provisions one man will consume in one month: Flour, 25 pounds; dessicated vegetables, 2 pounds; dried fruit, 5 pounds; oatmeal, 5 pounds; coffee, 3 pounds; bacon, 12 pounds; beans, 6 pounds; sugar, 5 pounds; tea, 1 pound; 4 cans condensed milk; salt and pepper, matches and mustard.

"The outfit sufficient to last one man six months can be procured in Juneau for about \$36, with a liberal discount on large orders. By a simple process of multiplication the amount nec-

essary to outfit a party of four to eight persons can easily be found. Of tools one should take a 42-inch steel pick, gold pan, rocker irons, steel pike, full spring steel shovel, hand saw, rip saw, whip saw, ax, hatchet, hammer, copper nails for boat building, two pounds of pitch, two pounds of oakum, tent, pocket knife, shotgun, and rifle, and 100 feet of half-inch rope. In case the boat is purchased, the oakum, pitch and copper nails may be omitted from the list.

"In clothing one should provide himself with two or three suits of heavy underwear, woolen socks, woolen shirts, one pair of hip rubber boots with leather soles, one pair of heavy prospector's shoes, a suit of mackinaw clothing, an oilskin coat, a sou'wester hat, three pair of the best woolen blankets, and one rubber blanket. Snow glasses are indispensable, as without them the intense glare of the sun will quickly produce snow blindness. The entire outfit, including the articles of wearing apparel named, will cost approximately \$100 and will weigh about 700 pounds. The trip should never be attempted alone, but should be made in parties of four or eight persons each. By so doing all can use the same camp outfit, tent and boat, and will not only lessen the individual cost of the portion of the outfit, but packing and boat building will be greatly expedited where there are a number of hands to do the work."

"The demand for dogs last winter could not be supplied. Dogs are a necessary feature of arctic travel, and when a man decided that he wanted to go from Circle City to Klondike last winter, the first thing he considered was whether or not he could get a dog to help pull his outfit through the snow. It was nothing unusual to see a man and a dog harnessed together to a loaded sled, both pulling with all their might. It seemed strange at first to see dogs, thin-bodied, long-haired, woolfish-looking animals, used in the place of horses. But they pull well, eat little, and sleep out on the cold snow all night, no matter if it is 50 or 60 degrees below zero. No horse could stand such treatment as these poor dogs receive. There are regular "freighters," though; they use dog teams and sleds instead of horses and wagons, hitching from six to twelve tough dogs to a sled; they pull a heavy load and get over the ground at a lively pace. One hundred pounds to the dog is the rule.

"The price of dogs last winter doubled, a few of the best bringing as high as \$150. It was almost impossible to buy one for less than \$100, no matter how poor he was. Some Indians thought it better to rent out their dogs at \$1 or more per day. If some man has the Klondike fever and has no money to buy or rent a dog, a friend who cannot go often furnishes the dog and

sends him up, the dog-owner thus securing a half-interest in the prospect or claim."

While the miners and prospectors who have been to Alaska invariably advise intending gold hunters to take an outfit weighing from 1,500 pounds to a ton and a half, it is a fact that very few of those who have already departed have taken anywhere near the amount advised. What the result of this failure to follow the advice of those who have had experience in the Yukon will be cannot be known until next spring, when the icy fetters of the frozen arctic region release the prisoners of the winter and give their stories to the world. Many of those who are starting now are doing so with an entire capital of not over \$300, whereas the returning miners advise a man not to think of going with less than \$500 to \$750, or even \$1,000. However, conditions of transportation and supply are changing almost daily, and the Yukoners are relying on improved facilities which the old ones knew nothing of.

Many people ask what a Yukon stove is. To save weight the stoves for that country have been made of sheet-iron. They are very simple, being just a box, with oven at the back and a telescope pipe. Some have a drum above the stove for baking. The iron barrels or tanks in which coal oil is taken into the country are made into stoves for the stores and saloons.

It is a very important matter to have the supplies properly packed to guard against damage by water and rough handling. The packs are made up to weigh about seventy-five pounds. First they are put in canvas bags, and then are wrapped securely in oilcloth. Should they be exposed to rain, dropped in wet snow or even immersed for a short time in the river, practically no damage will result. Any of those about to leave for Klondike who have packed carelessly would do well to have their outfits repacked at Juneau.

Robert Krook, a returned Swedish Klondike miner, says that Esquimo dogs will draw 200 pounds each on a sled, so that six dogs will draw a year's supplies for one man. He, however, puts in the proviso that the sleds should not have iron runners, because the snow sticks to the iron and increases the friction so much that the dogs cannot haul more than 100 pounds apiece. With brass runners this drawback is obviated. Last winter Esquimo dogs cost from \$75 to \$200 apiece, and he does not think the price will increase materially, because when the demand is known the supply from other parts of Alaska will be plentiful at Dyce, and other points along the Yukon. Sometimes the feet of the dogs get sore, and then the Indians fit moccasins on them; as soon, however, as the tenderness is

gone from their feet the dogs will bite and tear the moccasins off. Draught dogs need no lines to guide them and are very intelligent, learning readily to obey a command to turn in any direction or to stop. They have to be watched closely, as they will attack and devour stores left in their way, especially bacon, which must be hung up out of their reach. At night when camp is pitched, the moment a blanket is thrown upon the ground they will run into it and curl up, neither cuffs nor kicks sufficing to budge them. They lie as close up to the men who own them as possible and the miner cannot wrap himself up so close that they won't get under his blanket with him. They are human, too, in their disinclination to get out in the morning.

Where sleds cannot be used the dogs will carry fifty pounds apiece in saddlebags slung across their backs pannier fashion. Nature has fitted these dogs for their work, and other breeds are not as serviceable. The latter cannot stand the intense cold so well, and though at first they will draw the sleds cheerfully, their feet fail under the strain, and begin to bleed so freely that the dogs are useless. The pads under the feet of the Esquimo dogs are of tougher skin.

Mules and burros are being used between Dyea and Lake Lindermann to pack supplies over the summit of Chilkoot Pass. There are a few horses in the Yukon country.

A gentleman who has had a long experience with dog teams in the Northwest wrote to the London, Ontario, *Times* :

"Well, here we are down on the ice, and the dogs impatient to start. The sled consists of a narrow box four feet long, the front half being covered or boxed in, mounted on a floor eight feet long resting on runners. In this box the passenger sits, wrapped in rabbit skins so that he can hardly move, his head and shoulders only projecting. In front and behind and on top of the box is placed all the luggage, covered with canvas and securely lashed, to withstand all the jolting and possible upsets, and snow shoes within easy reach.

An important item is the dog whip, terrible to the dog if used by a skillful hand, and terrible to the user if he be a novice; for he is sure to half strangle himself, or to hurt his own face with the business end of the lash. The whip I used had a handle nine inches long and a lash of thirty feet, and it weighed four pounds. The lash was of folded and plaited seal hide, and for five feet from the handle measured five inches round, then for fourteen feet it gradually tapered off, ending in a single thong half an inch thick and eleven feet long. Wonderful the dexterity with which a driver can pick out a dog and almost a spot on that dog with this lash. The lash must

be trailing at full length behind, when a jerk and turn of the wrist cause it to fly forward, the thick part first, the tapering end continuing the motion till it is at full length in front, and the lash then making the fur fly from the victim. But often it is made to crack over the heads of the dogs as a warning.

"The eleven dogs were harnessed to the front of the sled, each by a separate thong of seal hide, all of different lengths, fastened to a light canvas harness. The nearest dog was about fifteen feet from the sled, and the leader, with bells on her, about fifty feet, the thongs thus increasing in length by about three feet. When the going is good the dogs spread out like the fingers of a hand, but when the snow is deep they fall into each other's tracks in almost single file. As they continually cross and recross each other, the thongs get gradually plaited almost up to the rearmost dog, when a halt is called, the dogs are made to lie down, and the driver carefully disentangles them, taking care that no dog gets away meanwhile. They are guided by the voice, using "husky," that is, Esquimo words: "Owk," go to the right; "Arrah" to the left, and "holt," straight on. But often one of the men must run ahead on snowshoes for the dogs to follow him."

The dress adopted by the whalers gives a good

idea of what is required on the arctic shores of Alaska. Over a suit of flannel underwear, the sailor dons a suit of caribou tanned by the Esquimos, with the fur inside. Then follow sealskin trousers, and a sealskin or reindeer overcoat, having a hood. Woolen mittens with sealskin mittens over them protect the hands, while two pairs of heavy woolen hose and native skin boots coming well up on the thigh keep the feet warm. It is best to line the boots with moss, as that is a good non-conductor. With such clothing a temperature of 60 degrees below zero is endurable. In still weather a man may expose himself in safety, but in very cold weather shelter must be sought, or all the clothes the traveler could put on would not prevent his freezing to death. Even the Indians occasionally perish when caught far from camp by a sudden storm.

THE MOUNTED POLICE.

“THAT even in the most remote spots in the world over which flies the flag of a civilized nation there should exist the perfect administration of justice and enforced regard for personal rights, is one of the triumphs that the nineteenth century can boast of as its own,” says a writer of the *San Francisco Chronicle*, “and no government in the history of the world can lay claim to having carried this marvel of executive foresight to such a degree of perfection as that of Great Britain. The trite saying that ‘if you tread on an Englishman’s toes in the Cannibal Islands there will be a warship round the corner next morning,’ is something more than a jest, and it is equally true that, no matter how far removed from the seat of government a human being may be, if Great Britain owns the soil on which he lives and toils, he may rest assured that, to whatever country he owes his allegiance, his rights will be rigidly protected and his crimes swiftly punished.”

Here and there among the mass of matter that has been written concerning the wonderful Klondike mines, brief allusions have been made to the fact that a little body of mounted police has been patrolling the district ever since the excitement began, keeping perfect order, and preserving among the constantly swelling populations of the various camps as peaceable conditions as can be found in the heart of any civilized community.

And in all the speculation concerning the future of the locality, its probable immense growth, and the fear of starvation, sickness and death, no fear has ever been expressed that anything in the nature of lawlessness or crime may get the upper hand, and run rampant, or that property rights and safety of the person will be in the least danger.

Vigilantes are to be unknown in this northern and snowbound El Dorado.

Though the excellent British mining laws, or rather laws founded by the Canadians on British precedent, are in the main responsible for this feeling of security, the men who undertake their enforcement are, after all, entitled to a great share of the credit, for good laws illy enforced are worse than useless. The Northwest Mounted Police of Canada, a body whose wonderful discipline and bravery have given the Dominion

food for most of her later literature, are the officers in whose hands has been placed the carrying out of these laws, and at this time, therefore, something concerning the organization and its internal workings should be of interest.

The Northwest Mounted Police, whose scarlet tunic is the symbol of law and order in the Northwest, were organized when Alexander Mackenzie was premier, and were one of Sir John Macdonald's inspirations, and after his return to power in 1878 they always remained under his own eye. The nucleus of the force was got together at Manitoba in 1873. They originally numbered 300, but by their coolness and pluck at critical periods they accomplished much in reducing the Indians and lawless whisky traders to a state of order. The police built posts and protected the white settlers, and the surveyors, who had already begun parceling out the country, and exploring the route of the Canadian Pacific Railway. In 1877 nearly the whole of the little force was concentrated on the southwestern frontier, to watch and check the 6,000 Sioux who sought refuge in Canada after having massacred General Custer and his men on the Little Big Horn. It was the mounted police that forced these Sioux warriors to surrender themselves to the United States authorities in 1880-1881. When the desperate half-

breeds, under the leadership of the cruel Louis Riel, rose against the authorities in 1885, the mounted police took a prominent part in their suppression, and the force was then increased to 1,000 men. Recently, however, the corps has not numbered more than 600 troopers, as times were quiet in the Northwest Territories, and there was little need of a strong body of men to keep order. It is likely that three or four hundred men will be promptly enlisted for service in the Yukon country.

The Northwest Police, like the Royal Irish Constabulary, on which it was modeled, is in the eye of the law a purely civil body. Its officers are magistrates; the men are constables. But so far as circumstances will allow, its organization internal economy, and drill are those of a cavalry regiment; and the officers have army rank when on active service.

The affairs of the force are managed by a department at Ottawa, under the supervision of a cabinet minister.

The executive command is held by a commissioner, ranking as lieutenant-colonel. The assistant commissioner ranks with a major, and after three years' service as a lieutenant-colonel. Ten superintendents, holding captains' rank, command the divisions, with about thirty-five inspectors as subalterns, who correspond to lieutenants.

The medical staff consists of a surgeon, five assistant surgeons, and two veterinary surgeons.

The rank and file are equal to those of any crack corps in the wide world. A recruit must be between 22 years and 45 years old; of good character; able to read and write English or French; active; well built, and of sound constitution. The physique is very fine, the average of the whole thousand being 5 feet 9½ inches in height, and 38½ inches around the chest. Many scions of English county families are in the corps, several of them having titles. A son of Lady Hitt is now a trooper at Calgary, Northwest Territory. He is 6 feet 4 inches tall and as powerful as any three average men. Lots of young Englishmen who have failed in the far West through frozen wheat, or some such usual drawback to prairie farming, have drifted into the police, as also many well-brought-up Canadians. Men of every calling are to be found in the ranks.

The officers' pay is not large, ranging from \$2,400 a year down to \$1,000 with quarters, rations, fuel and service free.

Of all the hard, tough work to be done in the Klondike region the Canadian Mounted Police will have the hardest and the toughest. But they are used to that, and no one who has seen them will doubt that better men for such perilous service do not exist.

The boundary line which these rough riders of the plains have to patrol is 2,000 miles long, and with the present mining excitement in full swing their work will be quadrupled. It is forbidden to give "firewater" to the Indians, though saloons are licensed in all the mining camps.

For the past three years there have been but twenty policemen on the Yukon, but the force in that region has been raised to 200, and the whole put under the command of Major Walsh, one of the firmest and most experienced officers of the force. The advance guard have already started, taking with them two rapid-fire Maxim guns, each capable of firing 1,200 shots a minute.

Fifty constables will enforce the customs regulations at Lake Lindermann, and succor belated travelers overtaken by early winter storms. A hundred will be posted at Dawson City, and the remainder be used as flying patrols, penetrating to the most remote diggings, and putting terror into the breast of the evildoer.

"Major Walsh, who has been selected as the administrative officer of the Canadian Yukon by the Canadian Government, is widely known to American miners on the Canadian border line and to United States army officers on the frontier," says the *New York Tribune*. "His iron-gray hair is brushed back from his forehead, and he wears a mustache and a dab of hair on his

chin that emphasizes his square jaw. The major is 5 feet 10 inches tall, and weighs about 190 pounds. He is as straight as an arrow, square-shouldered and athletic, and he is admired by the men and adored by the women in the regions where he is best known. His career in Manitoba and the Northwest is replete with stirring incidents. He is as brave as a lion, a strict disciplinarian, tactful and just. Major Walsh possesses a fair share of the world's goods, and he is generous and warm hearted, true and loyal to his friends.

“It was Major Walsh who organized the Northwest mounted police, one of the most efficient bodies of men under the flag of Great Britain. Fort Walsh was named after him, and his fame as a suppressor of lawlessness and his just dealings with the Indians made his name a watchword among the early settlers in Manitoba and British Columbia. If his advice had been taken, there would have been no Riel rebellion in Manitoba. When General Miles chased Sitting Bull and his Sioux warriors out of the Little Big Horn region across the border line into British territory Major Walsh rounded them up and received the surrender of Sitting Bull. At this time he made the acquaintance of General Miles, and they became fast friends. General Miles is a great admirer of Major Walsh, and considers him one of

the best organizers as well as one of the most intelligent, far-seeing, astute commanders he has ever met.

"Major Walsh is eminently fitted for the post, and every American miner from the Canadian boundary line to Mexico feels confident that he will receive all that is justly due to him through the offices of Major Walsh. The new administrator will have three hundred selected men, properly armed and equipped, and several Maxim guns as a force under his command.

"With Major Walsh at the head of the Yukon police, the Klondike region on the Canadian side of the line will be a region to which the bad men who shoot will do well to give a wide berth. Major Walsh and his men are familiar with desolate, waste regions from Hudson Bay to the Rockies, and from the boundary line of the United States to the region of eternal ice and snow of the Arctic. The men are inured to hardship, and their commander knows just what they require for their duties in the Klondike region. It is probable that the expedition will essay the crossing of the Chilkoot Pass and attempt to reach the mining regions by November. It is safe to say that the expedition under Major Walsh's command will be the best equipped that has yet started for the new land of gold."

CANADIAN MINING LAWS.

THE Yukon district is in the Northwest Territories, and is therefore subject to Dominion land and mineral laws. The Province of British Columbia extends but to the 60th parallel of north latitude, and her laws consequently do not apply to the Klondike region.

Since the news of the recent rich finds have reached the outside world the Dominion cabinet has met and passed new regulations, making important modifications of the rules passed last spring. The new regulations should be attentively studied by the miner.

The following are the precise terms of the amended regulations governing gold mining in the Yukon that appeared in the *Official Gazette* of August 14:

“That the regulations governing the disposal of placer mining claims along the Yukon River and its tributaries in the Northwest Territories, established by order in Council, be amended by providing that entry can only be granted for alternate claims, known as creek claims, bench

claims, bar diggings and dry diggings, and that the other alternate claims be reserved for the Crown to be disposed of by public auction or in such manner as may be decided by the Minister of the Interior.

"That the penalty for trespassing upon a claim reserved for the Crown be the immediate cancellation by the Gold Commissioner of any entry or entries which the person trespassing may have obtained, whether by original entry or purchase, for a mining claim, and the refusal by the Gold Commissioner of the acceptance of any application which the person trespassing may at any time make for claims; and that in addition to such penalty the Mounted Police upon a requisition from the Gold Commissioner to that effect, may take the necessary steps to eject the trespasser.

"That upon all gold mined on the claims referred to in the regulation for the government of placer mining along the Yukon River and its tributaries, a royalty of 10 per cent. shall be levied and collected by officers, to be appointed for the purpose, provided that the amount mined and taken from a single claim does not exceed \$500 per week, and in case the amount mined and taken from any single claim exceeds \$500 per week there shall be levied and collected a royalty of 10 per cent. upon the amount so taken

out up to \$500, and upon the excess or amount taken from any single claim over \$500 per week there shall be levied and collected a royalty of 20 per cent.; such royalty to form part of the consolidated revenue, and to be accounted for by the officers who collect the same in due course.

“That the times and manner in which such royalty shall be collected, and the persons who shall collect the same, shall be provided for by regulations to be made by the Gold Commissioner, and that the Gold Commissioner be and is hereby given authority to make such regulations and rules accordingly.

“That default in payment of such royalty, if continued for ten days after notice has been posted upon the claim in respect of which it is demanded, or in the vicinity of such claim by the Gold Commissioner or his agent, shall be followed by the cancellation of the claim.

“That any attempt to defraud the Crown by withholding any part of the revenue thus provided for by making false statements of the amount taken out may be punished by cancellation of the claim in respect of which fraud or false statements have been committed or made; and that in respect of facts as to such fraud or false statement or non-payment of royalty, the decision of the Gold Commissioner shall be final.”

Another order-in-Council reads as follows:

"Whereas, clause 7 of the regulations governing the disposal of placer mines on the Yukon River and its tributaries in the Northwest Territories, established by order-in-Council of the 21st of May, 1897, provides that if any person shall discover a new mine, and such discovery shall be established to the satisfaction of the Gold Commissioner, a claim for 'bar diggings' 750 feet in length may be granted; and, whereas, the intention was to grant a claim of 750 feet in length to the discoverer of any new mine upon a creek or river, and not to grant a claim of that length for 'bar diggings,' His Excellency, by and with the advice of the Queen's Privy Council for Canada, is pleased to order that clause 7 of the said regulations governing the disposal of placer mines on the Yukon River and its tributaries, shall be and the same is hereby amended, so that the above grant to a discoverer may apply to creek and river claims instead of to 'bar diggings.'"

The remainder of the mining regulations were not amended; they are as follows:

"'Bar diggings' shall mean any part of a river over which the water extends when the water is in its flooded state, and which is not covered at low water. Mines on benches shall be known as 'bench diggings,' and shall, for the purpose of defining the size of such claims, be excepted

from dry diggings. 'Dry diggings,' shall mean any mine over which a river never extends. 'Miner' shall mean a male or female over the age of 18 years, but not under that age. 'Claim' shall mean the personal right of property in a placer mine or diggings during the time for which the grant of such mine or diggings is made. 'Legal post' shall mean a stake standing not less than four feet above the ground, and squared on four sides at least one foot from the top. Both sides so squared shall measure at least four inches across the face. It shall also mean any stump or tree cut off, squared or faced to the above height and size. 'Close season' shall mean the period of the year during which placer mining is generally suspended, the period to be fixed by the gold commissioner in whose district the claim is situated. 'Locality' shall mean the territory along a river (tributary of the Yukon River and its affluents). 'Mineral' shall include all minerals whatsoever other than coal. 'Placer mining' shall mean the working of all forms of deposits excepting veins of quartz or other rock in place.

" 'Bag digging' is a strip of land 100 feet wide at high-water mark, and thence extending into the river to its lowest water level.

"The sides of a claim for bag digging shall be two parallel lines run as nearly as possible at

right angles to the stream, and shall be marked by four legal posts, one at each end of the claim, at or about high-water mark; also one at each end of the claim at or about the edge of the water. One of the posts at high-water mark shall be legally marked with the name of the miner and the date upon which the claim was staked. Dry diggings shall be 100 feet square, and shall have placed at each of its four corners a legal post, upon one of which shall be legally marked the name of the miner and the date upon which the claim was staked.

"Creek and river claims shall be 500 feet long measured in the direction of the general course of the stream, and shall extend in width from base to base of the hill or bench on each side, but when the hills or benches are less than 100 feet apart the claim may be 100 feet in depth. The sides of a claim shall be two parallel lines run as nearly as possible at right angles to the stream. The sides shall be marked with legal posts at or about the edge of the water and at the rear boundaries of the claim. One of the legal posts at the stream shall be legibly marked with the name of the miner and the date upon which the claim was staked.

"Bench claims shall be 100 feet square. In defining the size of the claims they shall be measured horizontally irrespective of inequalities on the surface of the ground.

"If any person or persons shall discover a new mine and such discovery shall be established to the satisfaction of the Gold Commissioner a claim for creek and river diggings, 750 feet in length, may be granted. A new stratum of auriferous earth or gravel situated in a locality where the claims are abandoned shall for this purpose be deemed a new mine, although the same locality shall have been previously worked at a different level.

"The forms of application for a grant for placer mining and the grant of the same shall be that contained in the form found at the foot of these regulations. A claim shall be recorded with the Gold Commissioner in whose district it is situated within three days after the location thereof if it is located within ten miles of the Commissioner's office. One extra day shall be allowed for making such record for every additional ten miles or fraction thereof. In the event of the absence of the Gold Commissioner from his office, entry for a claim may be granted by any person whom he may appoint to perform his duties in his absence.

"Entry shall not be granted for a claim which has not been staked by the applicant in person in the manner specified in these regulations. An affidavit that the claim was staked out by the applicant shall be embodied in form "H" of the schedule hereto. An entry fee of \$15 shall

be charged for the first year, and an annual fee of \$100 for each of the following years. This provision shall apply to locations for which entries have already been granted.

"After the recording of a claim the removal of any post by the holder thereof or by any person acting in his behalf for the purpose of changing the boundaries of his claim shall act as a forfeiture of the claim. The entry of every holder of a grant for placer mining must be renewed and his receipt relinquished and replaced every year, the entry fee being paid each time. No miner shall receive a grant of more than one mining claim in the same locality, but the same miner may hold any number of claims by purchase, and any number of miners may unite to work their claims in common upon such terms as they may arrange, provided such agreement be registered with the Gold Commissioner and a fee of \$5 be paid for each registration.

"Any miner or miners may sell mortgage or dispose of his or their claims, provided such disposal be registered with, and a fee of \$2 be paid to the Gold Commissioner, who shall thereupon give the assignee a certificate in form "J" in the schedule hereto.

"Every miner shall, during the continuance of his grant, have the exclusive right of entry upon his own claim, for the minerlike working thereof,

and the construction of a residence thereon, and shall be entitled exclusively to all the proceeds realized therefrom; but he shall have no surface rights therein; and the Gold Commissioner may grant to the holders of adjacent claims such right of entry thereon as may be absolutely necessary for the working of their claim, upon such terms as may to him seem reasonable. He may also grant permits to miners to cut timber thereon for their own use, upon payment of the due prescribed by the regulation in that behalf. Every miner shall be entitled to the use of so much of the water naturally flowing through or past his claim, and not already lawfully appropriated, as shall, in the opinion of the Gold Commissioner, be necessary to the due working thereof; and shall be entitled to drain his own claim free of charge.

“A claim shall be deemed to be abandoned and open to occupation and entry by any person when the same shall have remained unworked on working days by the grantee thereof or by some person in his behalf for the space of seventy-two hours, unless sickness or other reasonable cause shown to the satisfaction of the Gold Commissioner, or unless the grantee is absent on leave given by the Commissioner, and the gold commissioner upon obtaining evidence satisfactory to himself that this provision is not being complied with may cancel the entry given for a claim.

"If the land upon which a claim has been located is not the property of the Crown it will be necessary for the person who applied for entry to furnish proof that he has acquired from the owner of the land the surface rights before entry can be granted. If the occupier of the lands has not received a patent therefor, the purchase money of the surface rights must be paid to the Crown, and a patent of the surface rights will issue to the party who acquired the mining rights. The money so collected will either be refunded to the occupier of the land, when he is entitled to a patent therefor, or will be credited to him on account of payment for land.

"When the party obtaining the mining rights to lands cannot make an arrangement with the owner or his agent or the occupant thereof for the acquisition of the surface rights, it shall be lawful for him to give notice to the owner or his agent or the occupier to appoint an arbitrator to act with another arbitrator named by him, in order to award the amount of compensation to which the owner or occupant shall be entitled. The notice mentioned in this section shall be according to a form to be obtained upon application from the Gold Commissioner for the district in which the lands in question lie, and shall, when practicable, be personally served upon such owner or his agent when known, or occu-

pant; and after reasonable efforts have been made to effect personal service without success, then such notice shall be served by leaving it at or sending it by registered letter to the last place of abode of the owner, agent or occupant.

"The award of any two arbitrators made in writing shall be final and shall be filed with the Gold Commissioner for the district in which the lands lie.

"Every claim on the face of any hill and fronting on any natural stream or ravine shall have a frontage of 100 feet drawn parallel to the main direction thereof, and shall be laid out as nearly as possible in the manner heretofore provided.

"A new stream of auriferous earth or gravel, situated in a locality where the claims are abandoned, shall, for this purpose, be deemed a new mine, although the same locality shall have been previously worked at a different level; and dry diggings discovered in the vicinity of bar diggings shall be deemed a new mine and *vice versa*. Tunnels and shafts shall be considered as belonging to the claim for the use of which they are constructed, and as abandoned or forfeited by the abandonment or forfeiture of the claim itself.

"No person shall be entitled to the grant of any water of any stream for the purpose of selling the water to present or future claim-holders on any part of such stream. The Minister of the

Interior may, however, grant such privileges as he may deem just, when such ditch is intended to work bench or hill claims fronting on any such stream, provided that the rights of miners then using the water so applied for be protected.

"The agent in each district shall, under instructions from the Minister of the Interior, declare the close season in his district.

"Each holder of a mining location or of a grant for placer mining shall be entitled to be absent from his mining location or diggings and to suspend work thereon during the close season. Any miner or miners shall be entitled to leave of absence for one year from his or their diggings upon proving to the satisfaction of the superintendent of mines that he or they have expended on such diggings in cash, labor or machinery an amount of not less than \$200 on each of such diggings without any return of gold or other minerals in reasonable quantities for such expenditure.

"In the event of any breach of any of the above regulations by any person holding a grant for placer mining from the Crown, the Minister of the Interior, or from any duly authorized officer of Dominion lands, such right or grant shall be absolutely forfeited and the person so offending shall be incapable thereafter of acquiring any such right or grant unless for special cause it is otherwise decided by the Minister of the Interior.

FORM OF PLACER APPLICATION.

The following is the form of application for a grant for placer mining and the affidavit of the applicant:

I (or we) — of — hereby apply, under the Dominion mining regulations, for a grant of a claim for placer mining as defined in said regulations, in — (here describe locality) —, and I (or we) solemnly swear:

1. That I (or we) have discovered therein a deposit of — (here name the metal or mineral).

2. That I (or we) am (or are) to the best of my (or our) knowledge and belief the first discoverer (or discoverers) of said deposit; or,

3. That the said claim was previously granted to (here name the last grantee), but has remained unworked by the said grantee for not less than —.

4. That I (or we) am (or are) unaware that the land is other than vacant Dominion land.

5. That I (or we) did, on the — day of — mark out on the ground in accordance in every particular with the provisions of sub-clause (e) of clause eighteen of the said mining regulations, the claim for which I (or we) make this application, and that in so doing I (or we) did not encroach on any other claim or mining location previously laid out by any other person.

6. That the said claim contains, as nearly as I (or we) could measure or estimate, an area of — square feet, and that the description (and sketch if any) of this date hereto attached,

signed by me (or us) sets (or set) forth in detail to the best of my (or our) knowledge and ability, its position, form and dimensions.

7. That I (or we) make this application in good faith to acquire the claim for the sole purpose of mining, to be prosecuted by myself (or us) or by myself and associates, or by my (or our) assigns. Sworn before me — at — this — day of — 18—.

(Signature).

Form I—Grant for placer mining.

CUSTOMS REGULATIONS.

It is understood that the Dominion Government will not collect duties on personal outfits, but merely on articles imported for commercial purposes, and on machinery, etc. The power exists, however, to levy duty as per following schedule:

Shovels and spades, picks, etc., 25 per cent.; horses, 20 per cent.; axes, hatchets and adzes, 25 per cent.; baking powder, 6 cents per pound; bed comforters, 32½ per cent.; blankets, 5 cents per pound and 25 per cent.; boats' and ships' sails, 25 per cent.; rubber boots, 25 per cent.; boots and shoes, 25 per cent.; breadstuffs, viz., grain, flour, and meal of all kinds, 20 per cent.; butter, 4 cents per pound; candles, 28 per cent.; cartridges and ammunition, 30 per cent.; cheese, 3 cents per pound; cigars and cigarettes, \$2 per pound and 26 per cent.; clothing—socks, 10 cents per dozen pairs and 35 per cent.; knitted goods of every description, 35 per cent.; ready-made, partially of wool, 30 per cent.; waterproof clothing, 35 per cent.; coffee, condensed, 30 per

cent.; roasted, 2 cents per pound and 10 per cent.; substitutes, 2 cents per pound; extracts, 3 cents per pound; condensed milk, 3 cents per pound; cotton knitted goods, 35 per cent.; crow-bars, 35 per cent.; cutlery, 35 per cent.; dogs, 20 per cent.; drugs, 20 per cent.; duck, from 20 to 30 per cent.; earthenware, 30 per cent.; edge tools, 35 per cent.; firearms, 20 per cent.; fishhooks and lines, 25 per cent.; flour, wheat, 75 cents per barrel; rye, 50 cents per barrel; fruits, dried, 25 per cent.; fruits, prunes, raisins, currants, 1 cent per pound; fruits, jellies, jams, preserves, 3 cents per pound; fur caps, muffs, capes, coats, 25 per cent.; furniture, 25 per cent.; galvanized iron or tinware 30 per cent.; guns, 20 per cent.; hardware, $23\frac{1}{2}$ per cent.; harness and saddlery, 30 per cent.; jerseys, knitted, 35 per cent.; lard, 2 cents per pound; linen clothing, $32\frac{1}{2}$; maps and charts, 20 per cent.; meats, canned, 25 per cent.; in barrel, 2 cents per pound; oatmeal, 20 per cent.; oiled cloth, 30 per cent.; pipes, 35 per cent.; pork, in barrel, 2 cents a pound; potatoes, 15 cents a bushel; potted meats, 25 per cent.; powder, mining and blasting, 2 cents a pound; rice, $1\frac{1}{2}$ cents a pound; sacks or bags, 20 per cent.; sawmills, portable, 30 per cent.; sugar, $10\frac{1}{2}$ cents a pound; surgical instruments, 15 per cent.; tobacco, 42 cents per pound and $12\frac{1}{2}$ per cent.

DISEASES OF THE COUNTRY.

BEFORE it became easy to get proper food, scurvy was very prevalent, on the Yukon, and at every cabin could be seen a cottonwood pole partly stripped of its bark. The green outer bark was scraped off and the inner bark was steeped to make a tea which was drunk as a cure for the disease. It is very bitter and unpalatable. Scurvy is not now so common as formerly.

Scurvy, which results from an exclusive dietary of cereals and preserved meat, is really a condition of acid-intoxication, in the opinion of Dr. E. A. Wright, an English pathologist. Fresh vegetables and lime-juice are used as remedies, but both of them act slowly, and alkaline salts—such as carbonate of soda, carbonate of potash and a variety of others—are shown to be much better.

There is no doubt that a diet consisting largely of fat and fresh meat will keep off the scurvy. Neither Nansen nor Peary have suffered from

it, by following this course, whereas well-found government expeditions have suffered terribly therefrom, through the food being largely of canned meats and cereals. Salt beef and pork are especially dangerous. Mr. Bruce, formerly of the firm of Bruce, Bowne & Co., is going to Klondike, and his experience in fitting out whalers for the Arctic will stand him in good stead for his intended trip. One article that his party will take along will be lime-juice. The majority of the prospectors have overlooked this important article and other anti-scorbutics. According to Mr. Bruce there is every need of lime-juice and vegetables in the northern latitudes as preventatives against scurvy.

Whatever you do, don't neglect to take along a bottle of lime-juice as a safeguard against a disease which without some such precaution is very apt to manifest its presence after a few months of exposure, and rough or limited diet, without an adequate supply of fresh vegetables and fruit. And there will be mighty little of either on the Klondike this winter.

According to the accepted medical authority, scurvy is the result of an insufficient supply of potash salts, owing to an inadequate diet of fresh vegetables. But the mere administration of these salts will not prevent or cure the disease, which is a dreadful one, if not checked.

The symptoms come on gradually, being recognized by a failure of strength and exhaustion at slight exertion. The countenance becomes sallow or dusky, eyes sunken, and constant pains are felt in all the muscles. After some weeks utter prostration ensues; the appearance is most haggard; great trouble is experienced with the mouth, sore gums and teeth falling out; the breath is extremely offensive; finally swellings and dark spots on the body, with bleeding from the mucous membrane; then painful, extensive and destructive ulcers break out on the limbs, finally diarrhœa, pulmonary or kidney trouble may give fatal result. But even in desperate cases a return to fresh vegetable diet will cure, as will also, usually, lime-juice. Lime-juice has driven scurvy from the ocean, where it once counted its dead in every far-going ship's annals. It is now a slang term to describe an old salt. Sailors at sea are given a small daily allowance of lime-juice and they grow it with a little water at meals.

Prostration is the scourge of the country, and if a man is unfortunate enough to be taken down with this disease he might as well chant his death song, for his bones will bleach in the country of everlasting snows. Consequently it behooves every person contemplating the trip to prepare for the climatic rigors of the country.

A careless method of living is quite common

among beginners, and soon leads to debility and sometimes to scurvy. Old miners have learned from experience to value health more than gold, and they therefore spare no expense in procuring the best and most varied outfit of food that can be obtained.

In a cold, trying climate, where it is impossible to get fresh vegetables and fruits, it is most important that the best substitutes for these should be provided. Nature helps to supply these wants by growing cranberries and other wild fruits in abundance, but men in summer are usually too busy to avail themselves of these.

The diseases met with on the Youkon are dyspepsia, anæmia, scurvy caused by improperly cooked food, sameness of diet, overwork, want of fresh vegetables, overheated and badly ventilated houses; rheumatism, pneumonia, bronchitis, enteritis, cystitis and other acute diseases, from exposure to wet and cold; debility and chronic disease, due to excesses. Venereal diseases are not uncommon. One case of typhoid fever occurred in Forty-Mile last fall, probably due to drinking water polluted with decayed vegetable matter.

"In selecting men to relieve in this country," says Surgeon Willis, Northwest Mounted Police, "I beg to submit a few remarks, some of which will be of assistance to the medical examiners in making their recommendations.

"Men should be sober, strong, and healthy. They should be practical men, able to adapt themselves quickly to their surroundings. Special care should be taken to see that their lungs are sound, that they are free from rheumatism and rheumatic tendency, and that their joints, especially knee joints, are strong and have never been weakened by injury, synovitis or other disease. It is also very important to consider their temperaments. Men should be of cheerful, hopeful dispositions and willing workers. Those of sullen, morose natures, although they may be good workers, are very apt, as soon as the novelty of the country wears off, to become dissatisfied, pessimistic and melancholy."

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MISCELLANEOUS.

THE timber of the country is small compared with that found in British Columbia, but some of the white spruce trees are two feet in diameter. The trees composing Yukon forests are white and black spruce, larch, birch, cottonwood and black pine.

A very stout canvas canoe might be useful; only the cover need be taken.

There is loose ice in the Yukon by September 20, generally, and the river freezes over about the middle of October. Some seasons it remains open until November. The lakes on the Lewis branch are often frozen until June 10.

The fish found in the lakes and streams are the salmon, lake trout, grayling, pike and sucker.

A small party camped on any of the larger lakes would run little risk of starvation if provided with a couple of good gill nets, and able to devote the time to use them in the late autumn.

One of the essentials of the overland trip is a Yukon sleigh built of hard wood, shod with rough steel runners. The sleigh is 7 feet 3 inches long, but only 16 inches wide, so built as to be able to track the snowshoes. The cost is about \$7.

Compressed and dessicated foods will undoubtedly be of enormous service to prospectors in the Yukon district. For instance, 3 pounds of compressed tea; 15 pounds of dessicated soup; 25 pounds of evaporated potatoes; 10 pounds of dried apples; 4 bottles of best lime-juice, would undoubtedly be sufficient of such articles for one man, during a long Yukon winter, provided he had a certain amount of the usual coarse foods to supply the required bulk.

It should not be forgotten that the Arctic explorer Nansen gained 22 pounds in weight and kept in magnificent physical condition all through a long Arctic winter on a diet of fat bear's meat, without vegetables or other luxuries.

The Esquimo kayak is 12 feet long, 28 inches wide, and 15 inches deep. The frame weighs 16 pounds, the canvas or skin cover 14 pounds. If the canvas be used it will require 6 pounds of paint to make it water-tight, or better still a mixture of paraffin and tallow may replace the paint.

Gold is valued as follows:

1 oz. Troy pure gold is worth.....	\$	20.67
1 dwt. Troy.....		1.03
1 grain Troy.....		0.04½
1 oz. Avoirdupois.....		18.84
1 lb. Avoirdupois.....		801.37
1 ton (2,000 lbs.).....		602,737.20

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